CAROLINA planning

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Bradley Decker

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Carolina Planning

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Carolina Planning is a student-run publication of the Department of City and Regional Planning, University of North Carolina at Chapel Hill.

From the Editors:

This issue of *Carolina Planning* provides both a focus on two particular subjects in the field, affordable housing and workplace accessibility, as well as a wide-angle approach to planning issues, with a call for the application of sustainable development principles to plan creation.

The first piece in this issue is from Courtney Weill, who researched manufactured housing issues while working for the NC Low Income Housing Coalition. Her article explores some of the benefits and shortcomings within the manufactured housing industry as they relate to the viablity of mobile homes as an affordable housing option.

The next article, written by Nathan Macek, Asad Khattak, and Roberto Quercia, all of the University of Chapel Hill's Department of City and Regional Planning, examines the relationship between employment probability and commute time. This research is tied to a broader issue of the spatial mismatch between job seekers and employment possibilities, and the results point to implications for policies aimed at increasing accessibility of worksites.

Lastly, Bradley Decker, a recent graduate of the University of Chapel Hill's Department of City and Regional Planning, offers a new planning vision, calling for planners to integrate into plans the principles of sustainable development: system reproduction; balance among environmental, economic and social values; and linkage of local to global and regional concerns. By examining Charlotte and Atlanta plans through the lens of sustainablility, this article demonstrates how the sustainable development concept offers the breadth and analytical capability to lead the field into a new direction that will enable planning to bring life and health to our communities.

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Manufactured Housing In North Carolina: Current Issues and Future Opportunities

This article reviews the current context of manufactured housing within the nation and North Carolina in particular. Over the past decade, there has been significant growth in the number of North Carolina's mobile home residences, serving as an affordable housing option for low-to-moderate income households. Despite advances in the mobile home industry, five main sources of lingering problems within the indusy are identified: financing, land use, quality of constuction and installation, equity-building, and consumer protection. This review is intended to familiarize practitioners with issues related to manufactured housing, and calls for broad reform in the areas of consumer and industry education, state policy, finacing programs, and public perception as a means to ensure that manufactured housing can serve as a viable option for affordable housing.

Courtney Weill

Introduction

Trailers. Mobile Homes. Manufactured Housing. These words often inspire vivid images of shoddy singlewide houses, gravel driveways and poverty. But the landscape of today's manufactured housing is changing. What began as temporary recreational housing driven between campsites is now permanent housing in subdivisions, parks and on private lots. Today, homes range in quality, size, price, and styles. While nondescript singlewide homes still exist, most new manufactured homes are multi-section homes, some with pitched roofs and porches. These manufactured homes could easily blend into most neighborhoods, and the efficiencies of factory production keep them affordable, especially compared to site-built homes. In 2000, multi-section homes composed 70 percent of total manufactured home shipments.[1] However, many older singlewide homes still exist. The disparities between old and new, basic and upscale, pose several problems. They complicate the definition of today's manufactured housing. They make it difficult to eliminate the industry's age-old stigma. And they cloud the question: Is manufactured housing a viable alternative for affordable housing?

***Courtney Weill** researched manufactured housing issues while she was working at the NC Low Income Housing Coalition as a research assistant and campaign coordiator. A graduate of UNC-CH, she is now working as a freelance writer and a project coordinator for NC Citizens for Transportation Alternatives.*

In the 1930s and 1940s, families often took mobile homes on vacations to avoid expensive hotels at tourist spots. When the housing market tightened during World War II, people began using mobile homes as permanent residences. However, the homes remained mobile, allowing owners to move easily from job to job and camp to camp. The supply of mobile homes increased after World War II as the automobile and aircraft industries utilized their excess manufacturing capacity to build homes.[2] As the number of mobile home owners grew, so did the need for regulation. To address safety issues, the N.C. General Assembly passed a law in 1969 that required homes manufactured, sold or offered for sale in the state to meet certain construction standards. Then in 1974, the U.S. Congress preempted the state's actions by passing the National Manufactured Housing Construction and Safety Standards Act, or HUD code. The legislation established federal oversight of the industry to mitigate growing health and safety concerns. The HUD code, which continues to govern production, sets performance-based standards requiring engineers to design houses that meet specific wind, temperature and fire resistance levels. Congress amended the HUD code with the Manufactured Housing Improvement Act of 2000 (S1452), which requires the establishment of a dispute resolution program in every state by 2005. It also encourages government-sponsored housing enterprises to implement secondary market securitization programs for manufactured home loans and asks for a review of the programs for FHA manufactured home loans.

THE BASICS

Manufactured Home: A home built in a factory to the National Manufactured Housing Standards or HUD code, which was implemented June 15, 1976.

Modular Home: A home built in a factory to the state code where the home will be located.

Mobile Home: A home built in a factory before the enactment of HUD code in June 1976.

HUD: The United States Department of Housing and Urban Development, which has jurisdiction over the manufactured housing industry.

HUD Code: The informal name for the National Manufactured Home Construction and Safety Standards.

Figure 1. Some basic definitions.

North Carolina's lawmakers have acknowledged the opportunities for home ownership created by manufactured housing. In 1987, the General Assembly passed legislation that directed local governments to allow manufactured homes in more residential areas. This legislation intended to require inclusion of manufactured housing; however, it enabled planners to use criteria that can virtually exclude these homes. The state increased its regulation of the industry in 1981, when the General Assembly established the N.C. Manufactured Housing Board to handle consumer complaints and monitor the industry. In 2001, the General Assembly approved a process to classify mobile homes as real property, making it easier to qualify for traditional mortgages. Residents who own land with a manufactured home on a permanent foundation (e.g., concrete blocks and piers) can relinquish the home's personal property title for a real estate deed. The North Carolina Manufactured Housing Institute, a trade association with about 1,200 members in the state, works closely with the state legislature and local governments to promote the industry and clarify these regulations.

Manufactured housing has long been one option for affordable housing. People with low-to-median incomes – including teachers, policemen, janitors – often cannot afford to buy a site-built home. In some areas of the state, existing "fixer-uppers" can be purchased for less than mobile or manufactured homes, said Stan Duncan of the N.C. Department

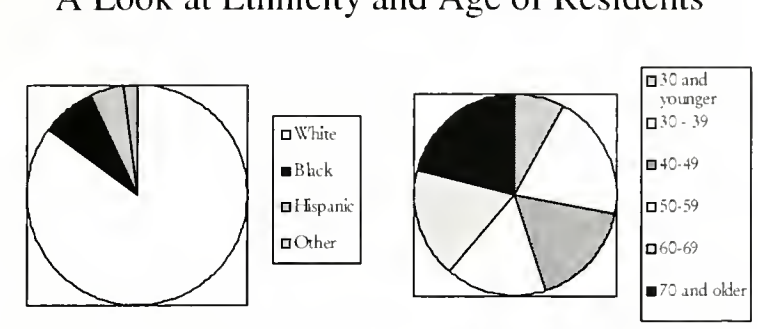
Who Lives In Manufactured Housing?
A Look at Ethnicity and Age of Residents
White
Black
Hispanic
Other
30 and younger
30 - 39
40-49
50-59
60-69
70 and older
Left: Data From the American Housing Survey 1999 as cited by William Apgar, Mark Duda and Madeleine Pill. "The Future of Manufactured Housing: An Update." Manufactured Housing Symposium, February 2002. Right: Data from Foremost Study 1996.

Figure 2. *The demographics of manufactured housing residents.*

of Revenue. "However, the additional cost to clean up these "fixer-uppers" may not be rewarded with a commensurate increase in the value of the property," Duncan said. "Hence the market tends to steer even the informed buyer towards manufactured housing."[3] Renting a home or apartment is the only other option, but the rental housing stock is sparse in many markets, and few new affordable rental units are being built. Manufactured housing is filling this affordable housing void across the nation, especially in North Carolina. Eighteen percent of the state's households live in manufactured homes, and that percentage increases in rural areas. Between 1990 and 2000, there was a 49 percent increase in the state's mobile home residences; as of 2000, there were 640,251 manufactured housing units in the state. [4]

Though the product has progressed through the implementation of the HUD code in 1976 and technological advances, industry regulations on sales and consumer protections have been virtually ignored. High repossession rates, set-up problems, dealer and lender kickbacks, and zoning discrimination have plagued the industry for years. Manufactured housing must resolve its lingering issues and shed its negative reputation to become a more viable option for affordable housing. These issues are most prevalent in five core areas: financing, land use, quality of construction and installation, equity-building, and consumer protection.

Financing. Manufactured housing is often classified as personal property and financed with consumer loans with high interest rates. The dealer often closes loans, and purchases can be quick and high-pressure. Repossession rates continue to climb because lenders accept poor credit ratings and fail to consider the buyer's ability to pay. FHA, VA and Rural Housing Service loans are under-utilized; however, conventional mortgage loans and collateral value are increasing, and more consumer-oriented secondary market investors like Fannie Mae and Freddie Mac are becoming more involved in the manufactured housing market. In other states, non-profit organizations are also beginning to buy or develop land-lease parks as affordable housing.

Land Use. Many municipalities have zoning laws that, in effect, restrict manufactured homes to large lots in rural areas, although the American Planning Association is advocating for the inclusion of manufactured homes in more residential zoning districts.[5] Manufactured housing can fulfill "smart growth" goals through urban infill projects and new in-town subdivisions, or undermine them by pushing growth farther out into rural areas.

Quality of Construction. Manufactured homes are built in accordance with the HUD code and inspected in the plant by a HUD-approved third party certification agency. The foundation, installation and utility connections are inspected by local building officials and must meet the state installation regulations. However, critics say that the HUD code is inadequate. In addition, problems arise during set-up and installation.

Consumer Protection. Unlike automobiles and real estate, the federal government does not directly regulate the sale of manufactured homes. Due to a lack of oversight, common problems include predatory lending, a lack of sticker prices, mandatory binding arbitration, a lack of disclosure, tight relationships between retailer and lender, insufficient warranties, and set-up and installation mishaps. Owners of manufactured housing on rented land must grapple with short-term leases, frequent rent increases, restrictions on the resale of a home, inadequate community facilities, and the threat of park closings. Despite the current problems, this core issue area offers the most opportunity for change through new legislation, advocacy and consumer education.

Equity-Building. Manufactured homes have historically depreciated. However, more stringent building standards and technological advancements have improved the product and its ability to appreciate. Important factors for appreciation include fair up-front pricing, real estate classification, community acceptance, home upkeep, good location and, on leased land, reasonable lot rentals with long term leases.

The intent of this research is to survey manufactured housing issues within the state, while putting them in the context of current initiatives across the nation. This paper aspires to give advocates a foundation of knowledge, not to be an all-inclusive analysis. The following examination of manufactured housing will clarify the true character of today's homes, identify the issues surrounding its poor reputation, and illuminate opportunities for improving the quality of life of its residents.

Financing

Today's financial landscape

Nationally, about 85 percent of new manufactured homes are financed with personal property or chattel loans.[1] However, some predict that the number of these loans will drop significantly during the next few years as consumers and lenders evolve. Personal property loans often have shorter loan terms and higher interest rates than conventional mortgages. In 1999, the average mortgage term for a site-built house was 25 years. During that same year, the average mortgage or loan term for a manufactured home was about 18 years if placed on owned land or 15 years if placed on rented land.[2] Manufactured home buyers often pay anywhere from two to five percentage points higher interest than conventional homebuyers. According to Consumers Union, loans were issued to manufactured home buyers in Texas at interest rates of 9 percent to 13 percent APR. Ordinary home loans during the same period were issued between 7 and 8.5 percent.[3] Most manufactured housing loans finance fees, points and other closing costs and require a minimal down payment.

Banks are often reluctant to pursue this market because the clients have low incomes and sub-prime credit. Consumers often are unaware of the variety of financing options, thanks to the relative absence of marketing by traditional lenders and the saturation of the market by private financiers. In North Carolina, buyers of new multi-section manufactured homes placed on owned land with a permanent foundation can qualify for a 6.125 percent or a 6.375 percent mortgage through the N.C. Housing Finance Agency (NCHFA), but few buyers know about this opportunity. In her 13 years with the NCHFA, Home Ownership Lending Director Sharon Drewyor said she had seen only 25 manufactured home loans come through the agency. In contrast, the Maine State Housing Authority, which serves one-eighth of North Carolina's population, has 2000 manufactured home loans on its books.[4] Both new and existing manufactured homes, depending on their price, also can qualify for a federal mortgage tax credit through the NCHFA that reduces the tax liability of low and moderate-income homeowners.

Greenpoint CEO Thomas Johnson, whose company pulled out of manufactured housing financing, explained the lack of lending standards and regulation in the industry. "There isn't enough discipline among the different layers – the manufacturers, the dealers and the people who do the lending," Johnson said. "In the mortgage business, you are much less reliant (than in the manufactured housing business) on an intermediary

who is a kind of mom-and-pop shop .... You are not reliant on more than 5,000 dealers who are not regulated the way mortgage bankers and brokers are."[5]

Manufactured housing sales are often high-pressure deals, where a home is sold on the same day as first contact. Sales are usually driven by a lack of affordable rental housing, said Helen Moore of the Self Help Credit Union in Durham. Buyers often don't know what they should pay and tell the dealer the highest payment that they can afford, Moore said. The dealer then prices the home according to that payment. "By the time they finish, they have paid more than the home is worth," she said.[6] Monthly payments can be misrepresented as well. At a Siler City dealership, a consumer named Roberto was not informed of his monthly payments until after signing a contract. The monthly payments were about $200 more than the salesperson told him in their prior conversations.[7]

Commissions and rebates for dealers also drive these poor lending practices. The industry lacks regulations that require the disclosure of settlement costs or kickbacks.[8] An investigative series into manufactured housing by the Keene (N.H.) Sentinel found that dealers often hiked interest rates to reap their own rewards. A dealership owner revealed that his business was paid a percentage of the loan amount for every percentage point of extra interest it could charge.[9] Sometimes an affiliated mortgage company finances the home; in this situation, the dealer directly profits from high interest rates and fees. Some dealers have falsified information to complete credit reports, putting people in homes they cannot afford. Local critics complain about dealers who create phony paychecks, W-2 forms and other proof of collateral to back up loans. "The day the industry accepts responsibility in its future, it will prosper," said Wesley Layton, owner of Layton Homes in Rocky Mount, a family business for more than 40 years.[10]

In North Carolina, Layton has pioneered the land-home package deal, which combines the home with the property at the time of purchase, opening doors for traditional mortgages. His lobby is filled with brochures from traditional lenders such as RBC Centura and the Carolina Mortgage Group. However, not all land-home package deals are financed as real property through mortgages. Many transactions still title the home as personal property, which is financed with a consumer loan, and tack on the land's deed of trust, which is financed with a traditional mortgage. These separate loans continue to occur, even though almost 70 percent of manufactured homeowners in the Southeast place their home on private land.[11]

High interest rates increase the overall cost of the house, causing consumers to borrow more than the house is actually worth. Over-lending leads to high loan defaults and low lending standards.[12] Currently, 12 percent of manufactured housing loans go into default.[13] This high default rate led to the demise of Greenpoint and falling stock for Conseco, two of the industry's top financiers. In this business, the volume of loans seems to take precedence over the borrower's ability to pay. According to The New York Times, Conseco repossessed 28,466 homes in 2000. "By the time the industry's hangover ends later this decade, hundreds of thousands more low-income borrowers will lose their homes. They will wind up with huge debts and ruined credit because their homes are worth far less than what they owe."[14] In North Carolina, Oakwood Homes sold 4,960 homes in the first quarter of 2001 and repossessed 3,900 due to bad loans in the same period, according to the Raleigh News & Observer. These repossessed homes are resold as used homes, causing new home sales to drop. In North Carolina, manufactured home shipments decreased 29.5 percent, falling from 19,352 shipments in 2000 to 13,649 in 2001.

The Linchpin: Real Property Classification

In order to qualify for most traditional mortgages, the manufactured home must be classified as real estate and attached to a permanent foundation. Real estate classification can be a complex process, and permanent foundations are costly, especially after the house has already been placed. Government and financial entities define permanent foundations differently. The state only requires concrete footing and piers for a permanent foundation; however, most mortgage loans require a permanent foundation with a brick or concrete

perimeter wall. According to Doug Williams of R-Anell Housing Group, a foundation system typically costs $35 per linear foot for a doublewide home. For a 24-by-60 foot home, a foundation would cost about $6,000.

Real property classification and the traditional loans that follow have many advantages. The federal Real Estate Settlement and Procedures Act (RESPA) applies to real property loans. RESPA requires lenders to provide a Good Faith Estimate of all costs within three days of the loan application and prohibits kickbacks to brokers and dealers. If the manufactured home is considered real property, the owners get the same foreclosure protections as site-built homeowners; but if it is considered personal property, it can be repossessed quickly like an automobile. Real property loans require an independent property appraisal, which prevents consumers from paying more than the home is worth.[15]

In December 2001, North Carolina passed a law that allows manufactured home residents who own both the home and the property to convert their title into a real estate deed. The legislation also amended the definition of real property. Previously, all multi-section homes could be classified as real property, even if on leased land, and all single-section homes were excluded. Now, a home – single or multi-section – is considered real property if it meets the following conditions:

- The home must serve a residential use.
- The moving hitch, wheels and axles must be removed.
- The home must have a permanent concrete foundation, defined as concrete footings and piers. No skirting or masonry is required.
- The home must be located on land owned by the owner of the unit.

Owners of homes that meet these conditions can relinquish their Certificate of Title, similar to an automobile title, to the Department of Motor Vehicles; and they can then petition the register of deeds for real estate classification. According to the N.C. Housing Finance Agency, the bottom line for any traditional lender is real property classification. Classification as real property benefits both local governments by increasing tax revenues and owners by increasing access to traditional mortgages.[16]

Unlike site-built homes, a conversion from personal to real property is necessary. Before it is installed on a site, a manufactured home is appropriately classified as personal property. Only a few states - New Hampshire, Texas and California – have implemented laws that facilitate or require the transition to real estate. Texas converted all manufactured homes placed on land owned by the homeowner to real estate under a bill passed in May 2001. While some states, like North Carolina, have a procedure that allows for canceling the title on a mobile home and making it real property, Texas requires that the title be canceled. The new statute makes property taxes easier to collect in Texas; with a tax lien for the house on the land, the house cannot be repossessed or sold without someone paying taxes. The industry spoke out against the bill partly because RESPA prohibits industry incentives. Consumers Union and the state's taxing authorities supported the bill.

New beginnings

As manufactured housing quality, unit size and land ownership increases, new options are appearing. Though the process is slow, both advocates and the industry foresee a trend toward mainstream mortgage lending for manufactured housing. Freddie Mac and Fannie Mae are purchasing manufactured home mortgage loans. Manufactured housing can qualify for Federal Housing Administration (FHA), Veteran's Administration (VA) and U.S. Department of Agriculture (USDA)/Rural Housing Service (RHS) loans, though they are often underutilized and funding can be stalled. After poor performance and a virtual shutdown, a restructured FHA Title I loan program reopened for business in 2002.

To promote better lending practices and clean-up the industry's reputation, the Manufactured

Housing Institute has developed a voluntary industry program called the Lender Best Practices program. Six lenders have applied to participate including Chase Manufactured Housing (a division of Chase Manhattan Mortgage Corp.), Conseco Finance Corp., Origen Financial L.L.C., Triad Financial Services Inc. Vanderbilt Mortgage and Finance and CIS. Participants must demonstrate to their funding sources that they have the business mechanisms necessary to verify consumer information and prevent fraud. The program establishes a minimum set of performance standards for the entire credit transaction. These standards have not been publicly disclosed. Each lender will undergo an annual audit to ensure these standards are utilized. The Institute should have the first audit reports this summer; these audits check both financial reports and the individual processes for loan approval. While the program should benefit consumers in the end, it is aimed for internal use by the industry to measure benchmarks and restore confidence.[17]

Government-sponsored companies, like Fannie Mae and Freddie Mac, are also making manufactured housing more affordable to the low-income population through the secondary market. Freddie Mac is a private company chartered by Congress that buys mortgages from lenders who support home ownership and rental housing. Their requirements include the following:

- The home must be installed on a foundation system that meets manufacturer's specifications.
- The land must be owned in fee simple or an acceptable leasehold estate (i.e. the lease must be longer than the mortgage and otherwise acceptable to Freddie Mac).
- The home must be classified and taxed as real estate.[18]

Fannie Mae's requirements vary slightly from Freddie Mac. Fannie Mae, a private company operating under a congressional charter to increase homeownership, requires the following:

- The purchase of land and the home must be a single real-estate transaction;
- The home must be built after the HUD Code went into effect on June 15, 1976;
- The home must be installed on a foundation that is appropriate for soil conditions and meets state and local codes.

Both Freddie Mac and Fannie Mae require an appraisal report that demonstrates the market value and marketability of the land and home package. They also set higher credit standards than many manufacture housing lenders who specialize in sub-prime credit.

Freddie Mac's program pertains to both individual manufactured homes on the owner's land and to manufactured housing land-lease communities and subdivisions, said Rick Coffman of Freddie Mac. In their pursuit to bring the traditional mortgage industry to manufactured housing, Freddie Mac representatives have attended Manufactured Housing Institute meetings and reached out to lenders and dealers. "We're going very slowly, but it's working," Coffman said. "We are marketing and our strategy is to work with those folks in the industry who can have as much impact as possible on a broad scale." Though it will take five to ten years for manufactured home financing to resemble home mortgage financing, Coffman said dealers and lenders would eventually see the advantages of a traditional mortgage. "It's going to go slow because we're talking about the melding of two industries," Coffman said. "But Freddie Mac's view is (that manufactured housing is) one of the housing alternatives for the future. It's at a price point that people can afford."[19]

Government loan programs such as FHA, VA and RHS have been underutilized in North Carolina. These programs require thorough loan documentation and slow down the approval

process, leading many buyers to the high-interest, quick-approval private financing companies. To overcome this inertia, public finance agencies and government loan administrators should target this market. Consumers need education on the different loans and foundation requirements before purchasing and placing their homes.

Though manufactured homes comprise a large percentage of the rural housing stock, the Rural Housing Service, a division of the USDA, tends to shy away from financing these homes due to the quality of construction and the life expectancy of the product, said Bill Hobbs, the state's director of single family housing for the RHS. The RHS loans aim to give families their first chance to build equity, and putting money in something that may depreciate is a disservice, Hobbs said. If RHS does approve a manufactured home loan, the house most likely has been improved with a permanent foundation, carport, porch, and pitched roof. The service likes homes that are placed in substantial developments where there is no stigma of a "trailer park," Hobbs said. Manufactured homes comprise less than one percent of RHS loans in North Carolina, partly because prospective buyers can get private loans easily and RHS aims to meet unserved credit needs. To obtain a 30-year loan through RHS, buyers must be U.S. citizens or legal aliens with good credit, low income and no other property.[20] RHS also requires installation by approved dealer-contractors who hold a general contractor's license, but there are very few of these specialists in the state.

Site-built homeowners have a wide variety of options to refinance their homes, obtain home equity loans, and resell their homes. On the other hand, there are few opportunities for manufactured homeowners to refinance their home. Equity loans are virtually impossible to obtain; many banks do not accept that manufactured homes build equity and, therefore, do not accept them as collateral. The financing of used manufactured homes is even more difficult. When a site-built home is resold, buyers can choose from a wide variety of mortgages. There are no penalties for a "used" home. However, used manufactured homes are seen as obsolete. Fannie Mae and Freddie Mac programs do not always accept them, and traditional banks are wary of even new manufactured homes. Used homes are almost completely financed by private brokers who charge high interest rates and offer few incentives.

For those in land-lease situations such as mobile home parks, non-profit development could be one answer. According to Deane Sargent of PMC Financial Services, non-profit organizations across the country are taking different approaches to manufactured housing. PMC Financial Services is a California-based company that specializes in financing mobile home parks for non-profits and resident groups. Some non-profits buy and operate parks as affordable housing. Others provide down-payment assistance for the purchase of new or used homes, while some refurbish old manufactured homes. Using FHA and tax-exempt bonds, non-profit groups can often finance 100 percent of the park's cost. However, small parks are difficult to finance, and the overall financing process can be lengthy. Despite these obstacles, non-profit and resident owned parks can be found in several states including Vermont, New Hampshire, Utah, Florida, and California. In Vermont, residents own two mobile home parks – Tri-Park in West Brattleboro and Williston Woods in Williston. Not-for-profit housing agencies own 35 other parks in Vermont on behalf of the residents and have built three new parks as affordable housing.[21]

Land Use

Manufactured housing evokes mixed emotions from local officials and planners. It provides a relatively small tax base, and older manufactured homes in crowded parks or remote locations are difficult to reach with city services. Abandoned substandard units that litter the landscape are expensive to dispose of properly. Many municipalities reject proposals for parks and do not allow manufactured homes in existing neighborhoods. On the other hand, manufactured homes provide affordable housing, which is scarce in North Carolina.

The N.C. General Assembly passed a law in

1987 that prevents municipalities from excluding manufactured housing through zoning or other provisions. The law emerged after several local governments adopted zoning regulations that "severely restrict the placement of manufactured homes." The state law recognizes that "manufactured housing offers affordable housing opportunities for low and moderate income residents of this State who could not otherwise afford to own their own home." This law allows municipalities to enforce appearance and size criteria and designate a manufactured home overlay district within a residential district.[22]

Despite the inclusionary intent of the 1987 law, municipalities use these two regulations – appearance criteria and overlay districts - to discourage manufactured housing or at least make the available sites unattractive. According a study done by graduate students at East Carolina University, manufactured housing was located further away than other types of housing from health and emergency rescue services; cultural, recreational and education services; auto, food, shopping and other business services; and major employment centers such as offices and factories. According to the study, manufactured housing was often located near landfill sites, solid waste treatment facilities and flood zones.

Most manufactured homes are located on the edges of towns or in rural areas. According to the 2000 Census Supplementary Survey, manufactured homes accounted for 18 percent of the housing units in North Carolina. However, this percentage skyrockets in rural areas and drops significantly in urban areas. In some rural counties, manufactured housing can account for 50 percent or more of new housing starts, said Stan Duncan of the N.C. Department of Revenue.[23] In the Raleigh-Durham-Chapel Hill Metropolitan Statistic Area, manufactured homes accounted for only 10 percent of housing units.[24] However, the Raleigh City Council recently allowed a custom-designed manufactured home to be placed in the Caraleigh neighborhood of southeast Raleigh as an example of urban infill. Many residents and advocates applauded the design of the house to fit the neighborhood, which had not seen a new home in 30 years, but others questioned the cost and appropriateness of the home, which sold for about $120,000. Infill projects can promote smart growth goals and bring affordable housing to downtowns. The new houses are often cheaper than remodeling deteriorating houses. The Manufactured Housing Institute, the national industry association, is pushing its urban infill initiative by custom designing homes in cities across the United States. However, high volume location of manufactured housing remains a predominately rural phenomenon.

By allowing manufactured housing in more residential districts, local governments could help increase affordable housing opportunities. The American Planning Association (APA) is taking proactive steps to encourage the inclusion of manufactured homes. The APA advocates allowing appropriately designed manufactured homes as a type of housing in many residential zoning districts, not just in separate subdivisions or land-lease communities. The national planning organization aims to develop and recommend model definitions, siting standards and design standards to achieve local design and compatibility goals. The APA supports government regulations that would require certification for manufactured home community owners and managers and create tax equity and consistent valuation.[25]

A View from the Field

Land use issues are decided by local governments, many of which, in North Carolina, have no comprehensive plans and no professional planners. Because of the subjective nature of this topic, planners from three different regions of the state were interviewed on their region's experiences with manufactured housing: Merril Flood, a planner from Greenville; Barry Warren, the Cumberland County planning director; and Paul Robinson, Jr., the Wilkes County planning director.[26]

Greenville is located in Pitt County, where the economy depends on wholesale, retail and manufacturing industries. With a per capita income of $22,772, some form of affordable housing is necessary for the county's 133,798 residents. In this area, manufactured housing is one choice sought by individuals because the area lacks an ample

supply of traditional affordable housing, said Merril Flood. The city's main planning issue is how to fund low-income developments and require developers to pay for the added cost of development that a community may experience. Builders, Flood said, often pass on the high development costs to the consumer; therefore, few are interested in building affordable housing because it lowers the profit margin. In Greenville, developers are faced with the same development costs for manufactured housing subdivisions as site-built subdivisions, eliminating some of the cost advantage. While there are a handful of private citizens, builders and nonprofit organizations interested in affordable housing, some do not have the resources to make it happen. Therefore, low-income residents resort to buying manufactured homes and moving to unincorporated areas of the county where land is cheap. Farmers also are starting to rent out lots on their unproductive land. These rural manufactured home parks usually have the worst conditions and leasing practices, he said. He noted that Pitt County has few means of enforcing basic regulations that ensure decent, safe and affordable housing for its residents.

In Cumberland County, manufactured homes account for 15 percent of all housing units.[27] Manufactured homes are allowed in almost all residential zones in the county. This housing is a quick, affordable alternative for lower income residents, Barry Warren said. In this area, the average income is $25,285, and the economy is driven by the military base and manufacturing. Despite their apparent popularity, manufactured home leasing communities often have a poor reputation, Warren said. The stigma evolves from the idea of a park, where the lack of ownership often leads to an absence of pride. These parks tend to be crowded, and in rural areas, can encroach onto the view of a single-family stick built home, Warren said. At public hearings, opposition to manufactured housing often disappears when people learn that the home will be placed on privately owned property. The public, Warren said, often doesn't realize that manufactured housing has changed drastically over the past 20 years. "You have manufactured housing today that you can't tell from a stick-built house," Warren said. "They have everything: shingles, a pitched roof, brick underpinning, fireplaces." Many communities are now encouraging manufactured home subdivisions with half-acre lots that resemble conventional developments. These developments often hold value and would increase the county's tax base. "If any unit is made more attractive, be it a single family house, a stick built house or manufactured housing, it is better accepted," Warren said. The county planning department soon will release a manufactured housing report that will advocate banning the transport of older units into the county, requiring stringent appearance criteria, and devising an effective way to include these homes in the county's property tax base.

Wilkes County in the western part of the state is predominately rural, and more than 90 percent is not zoned, and therefore, open to manufactured homes, said Paul Robinson. In 2001, 526 manufactured homes were set up inside the county. Only 176 stick-built homes were constructed in that same period. However, in the zoned portions of the county, manufactured housing is either banned or restricted to individual lots. The county is debating the implementation of county-wide zoning and a formal land use plan, which could limit the space for new manufactured homes, Robinson said. These homes, he said, have both advantages and disadvantages for the county's residents. They are affordable, and the sales process is quick and relatively hassle free, he said. However, some landlords and owners are renting substandard homes to residents in Wilkes County. Both HUD-code units and older units are housing immigrants and those with low incomes at very high rents. The practice is so common that Wilkes and surrounding counties have barred the transportation of non-HUD code units into their jurisdictions. Overall, stick-built housing has become so unaffordable in the region, Robinson said, that he cannot foresee an alternative to manufactured housing in the near future. "The environment for manufactured housing in Wilkes is very conducive, primarily because it is becoming a way of life through necessity brought on by the economy," he stated. "The mindset of many is 'why build or buy a house when you can purchase a double-wide.'"

Quality of Construction

Manufactured housing construction is regulated by the U.S. Department of Housing and Urban Development (HUD). Manufactured homes are built in a factory according to the federal National Manufactured Home Construction and Safety Standards or HUD code. The federal government has not performed a full review of the code since its implementation in 1976. However, Congress amended the act in 2000 to require regular updates, creating a consensus committee to reexamine HUD code and recommend changes every two years. Within five years, each state must establish an installation program to create installation standards, train and license home installers and inspect home installation. States must also implement a dispute resolution program in the next five years that resolves complaints during the first year after installation. North Carolina already meets these two requirements.

HUD code prescribes "performance-based" standards, or standards that require engineers to design houses to stand up to specific wind, temperature and fire resistance levels. The N.C. building code has been modeled on the Council of American Building Officials (CABO) One and Two Family Dwelling building code, which assigns prescriptive standards that list specific building component requirements, such as the type and quantity of insulation, to ensure performance. A comparison of CABO code and HUD code found that "on balance, the codes are comparable."[28] Pat Walker, deputy commissioner of the state's Manufactured Building Division, agreed that the codes were "very similar." Hazel Stephenson, hearing officer for the division, noted that many of the materials found in site-built houses, such as sheet rock, were present in manufactured homes.[29]

Pre-1976 homes vary in quality. Some still exist in good condition; others are in disarray. Images of these homes – which often feature metal roofs and metal siding – help propel the general public's negative perception of manufactured homes. As of 1990, pre-76 homes accounted for 38.5 percent of the almost 358,700 occupied manufactured homes in North Carolina. This older stock is often used as rental property and occupied by people with the lowest incomes. This rental market impelled Wilkes County to ban the transport of pre-HUD code homes into its jurisdiction, stated County Planner Paul Robinson.[30] Many other N.C. counties have the same policy. Due to the absence of quality standards, many homes built before 1976 have a shorter lifespan than modern manufactured home, and therefore, they are now quickly deteriorating. However, North Carolina had quality of construction standards for mobile homes before HUD code was enacted. In 1969, the N.C. General Assembly passed a law that required homes manufactured, sold or offered for sale in the state meet the Mobile Home Standard A119.1.

New manufactured homes undergo several inspections between the time the plans are drawn and the house is placed on the lot. Design Approval Primary Inspection Agencies (DAPIAs) inspect concise drawings for each model to ensure the plans meet HUD code, and the manufacturer must build the home to these plans. Third party certification agencies or In Plant Inspection Agencies (IPIAs) approved by HUD inspect the homes in the plant. Each home is inspected in at least one phase of construction. By contrast, each site-built home is inspected at several stages during construction. The manufacturer also has its own quality controls at each station on the assembly line. Once homes reach the dealership, the dealer is responsible for checking for damage during transportation. Once set-up on the residential site, local building officials inspect the foundation, installation and utility connections. According to a new state law passed in September 2001, all local inspectors must enforce the N.C. Regulations for Manufactured and Mobile Homes: if the set-up and installation code is not enforced, a complaint now can be filed with the inspectors' qualifications board. This legislation improves the quality and consistency of inspections by creating a clear incentive to comply with state regulations. Previously, local officials often had performed incomplete inspections that did not enforce all of the state's requirements or enforced requirements that went beyond the code.[31]

North Carolina enforces additional laws regarding manufactured housing. In 1981, the state legislature created the Manufactured Housing Board under the auspices of the N.C. Department of Insurance to regulate the industry and handle consumer complaints. The state licenses all members of the industry – dealers, salespersons, set-up contractors – and requires manufacturers and dealers to post bonds up to $100,000. The state can recover the bond money if a buyer suffers loss or damage due to improper actions by the manufacturer or dealer. Industry licenses must be renewed each year. Thanks to an update of the statute, salespersons must complete six hours of continuing education and set-up contractors must complete four hours of continuing education to renew each year. The state requires at least a year warranty on all structural elements, including any modifications made by the dealer and proper set-up. The state issues a comprehensive manual on manufactured home set-up and installation to the industry and state inspectors. State transportation requirements do not allow for all of the designs and exterior elevations now provided by the industry. North Carolina is one of 41 states that limit transport of 16-foot-wide homes on narrow roads; these homes can be transported only east of Highway 220, which runs from Reidsville to Rockingham.[32]

The Manufactured Building Division of the N.C. Department of Insurance performs additional checks on the industry. The division is the State Administrative Agency responsible for the operation of the Federal Manufactured Housing Program. In 2001, Division staff members participated in 25 week-long HUD audits of manufacturing plants. These audits evaluate the manufacturer's quality control program and the performance of the IPIA responsible for overseeing its production. In 2001, the Division also conducted 78 In-Plant Records Reviews at 25 N.C. manufacturing facilities to ensure the manufacturer investigated all consumer complaints. The review determines if the manufacturer complied with federal regulations and properly handled each complaint item. In 2001, the Division audited 1,491 retail lots to check for transit damage, seal tampering, and licensing of the retailer and salespersons.[33]

R-Anell Housing Group, LLC, is recognized as a top manufacturer of homes. Doug Williams, Vice President of Quality Control, reviewed the strengths and weaknesses of the current regulations and processes to ensure quality construction. Each company's quality control system is submitted for approval to federal or state regulatory agencies and is subject to annual third-party compliance audits, Williams said. The factory process – assembly in controlled stations – ensures that each home meets pre-defined construction standards and eliminates variations in quality from house to house. Every deviation from these standards and the method used to correct them is recorded by the manufacturer and kept on file for external audits. Manufacturers routinely upgrade all aspects of the construction process, including materials, employee training, and construction methods. Despite this system of repeated inspections, deficiencies in quality still surface. These errors, he said, arise because the manufacturing process involves several steps and many people. "Factories build, transport companies haul, installation companies set-up, local subcontractors hook up key systems such as electrical, plumbing, and heat/cooling," Williams stated. "Finally, local building inspectors monitor this on-site work and rule on its level of conformance to codes."[34]

Quality Questions

Despite the checks and balances of regulatory agencies and inspectors, problems with the quality of manufactured homes still arise. Critics worry that HUD code is outdated, although the Manufactured Housing Improvement Act of 2000 requires regular revisions of the code. A subsequent revision has not been completed. The only significant revisions to the HUD code occurred after Hurricane Andrew destroyed almost all of the mobile homes in the southern part of Dade County, Florida in 1992, and yet fewer than 30 percent of the site-built homes in the area suffered irreparable damage.[35] In July 1994, the federal government issued revisions to the wind safety provisions or the Basic Wind Zone map. The revisions strengthened building standards for homes in areas likely to encounter hurricane force winds.[36]

Many manufactured homes were destroyed in North Carolina during Hurricane Floyd's run through the state in 1999; however, site-built homes in the same areas were ruined as well. Some homes did withstand the hurricane's fury well. After Hurricane Fran, a North Carolina HUD official recalled, "I saw a couple of standing, apparently unharmed, manufactured units on Wrightsville Beach – the stick-built units on either side were nearly demolished. That got me interested and I've looked at manufactured housing as a possible asset since that time."[37] However, no recent comprehensive studies exist on how well these homes endure hurricanes and other natural disasters.

Critics also complain about improper installation. There are no federal guidelines for installation, and only 23 states, including North Carolina, license or certify installers.[38] When a home is installed incorrectly, repairs can be costly if they are at all possible.

According to a 1999 survey sponsored by the American Association of Retired Persons, 77 percent of owners reported having at least one problem with the construction, installation or appliances of their new homes, and 57 percent reported multiple problems. Common problems included interior fit and finishes, improper fit or leaks in doors and windows and problems with general construction such as cracks or separation of walls and plumbing.[39] Between 1996 and 2001, the N.C. Manufactured Housing Board held 137 individual hearings, and 42 percent of those hearings addressed warranty issues. Warranty issues ranged from defective I-beams to cabinets not closing properly. Five percent addressed problems with the set-up and installation of the home.

Since most manufactured homes are less than 35 years old, their long-term durability is still in question. Nationally, about 70 percent of manufactured homes have been built since 1975, and about 98 percent of the current stock was built after 1960.[40] According to a 1998 study commissioned by the Manufactured Housing Institute, the average life span of a home is 57.5 years.[41] However, other researchers in the field question the study's methodology and its findings. Consumer Reports stated, "manufactured housing can last as long as site-built housing;" however, they did qualify their report by noting that expensive homes pose fewer problems than lower cost ones.[42] In other words, cost and quality are tied closely together.

Whatever the life span, manufactured housing has been and will continue to be a major force in North Carolina. In the United States, North Carolina ranks second in manufactured housing sales and fourth in production. The $3.85 billion industry within the state employs more than 15,000 people in 29 manufactured housing plants and 735 retail sales centers.[43]

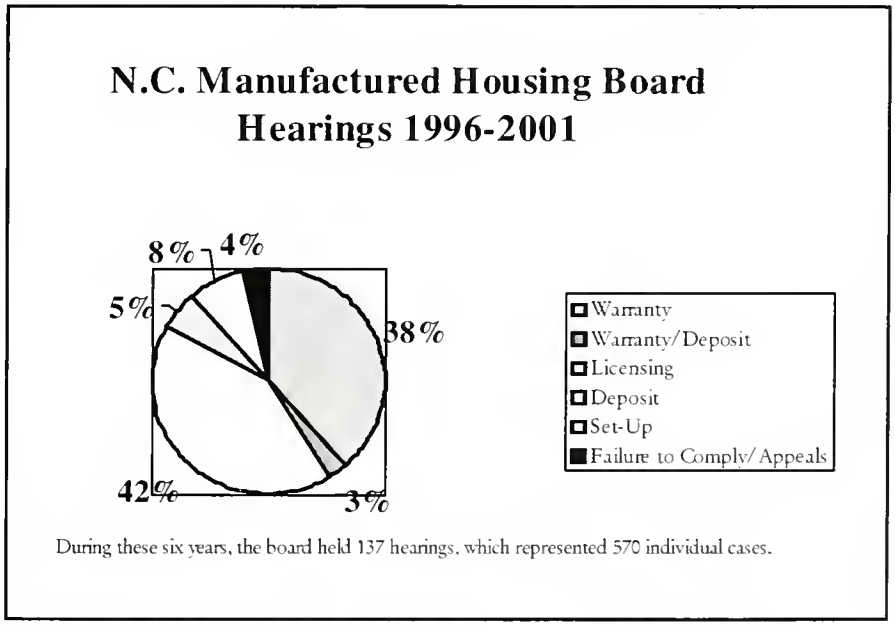

***Figure 4**. Issues raised at board hearings.*

Consumer Protection

Consumer Concerns

Some homeowners have an easy buying and living experience with their manufactured home. Others encounter serious problems.

Financing problems seem to be most prevalent and costly. People often buy homes at inflated prices with payments that they cannot afford, resulting in a loss of shelter and ruined credit. In 1998, 12 percent of manufactured housing loans went into default,[44] and the percentage increased with the recent economic downturn. The N.C. General Assembly recently addressed questionable home lending standards with its groundbreaking predatory lending law, but the new legislation does not apply to all manufactured home transactions. When a manufactured home is financed as a real estate transaction, the finance company must adhere to the state's new predatory lending law. One section of law addresses high cost home loans and residential home loans of $240,000 or less that have either high fees (more than 5 percent of the loan amount) or high interest rates (10 percent or more than the comparable Treasury bond rate). High fees and interest rates can apply to manufactured home sales. These high cost home loans must conform to a new set of rules that ban balloon payments and the financing of upfront fees and insurance premiums. The new terms require high-cost loan borrowers to undergo counseling and lenders to consider the consumer's ability to repay by examining the ratio of income and expenditures.[45]

Manufactured home sales and financing are further clouded by the unusually close relationship between dealer and lender. Many dealers have their own in-house firms that finance homes. The dealer can offer a homebuyer an extremely low price on a home and then profit through financing with high interest rates, exorbitant fees, kickbacks, and bonuses from the lender.

Manufactured homes, like automobiles, are sold with an order that lists features and prices. Critics note the inadequacy of a simple checklist for such a complex purchase. A dealer's lot contains many models for customers to peruse; the customers pick the features that they want, and the dealer sends an order to the manufacturer. Most homes are special ordered in this manner and never feature sticker prices. The lack of clear price disclosure opens the door for fraud: some buyers complain of touring one type of home and having another type delivered to their site.

Juane Speller of Williamston filed a complaint to the Attorney General's office when she received a home that was not what she expected. "My home was delivered two weeks later with no washer and dryer, air conditioner (or) skirting, unfurnished and severely damaged. I have made several calls to A& E Homes only to be told that they are not a charity organization and that there is no one available to help me get what is rightfully mine."[46] A & E Homes later filed bankruptcy and went out of business. Sticker prices would allow buyers to determine what they can afford and what to order without the help of a salesperson who may or may not have the buyer's best interests at heart.

Sales contracts sometimes include a mandatory binding arbitration agreement. If a person signs one of these agreements, he or she gives up the right to go to court to have a claim resolved in court. These agreements remove an incentive for dealers to follow up on their promises. Warranty issues comprise a majority of the cases brought to the attention of the Manufactured Housing Board and the Attorney General's office

Consumers often complain about dealers retaining their deposits. A contract to purchase must be signed at the time a deposit is made. After signing the contract, consumers have three business days to cancel the contract in writing to receive a full refund. However, since consumers do not always have their home or their final financing papers at the end of three days, they have no reason to cancel, only a "cooling-off" period. Deposit disputes accounted for 5 percent of the hearings held by the N.C. Manufactured Housing Board from 1996 to 2001.

Land-leasing concerns

More than 3 million American homeowners own their manufactured homes on rented land. These manufactured homeowners grapple with additional issues. Some common problems are frequent rent increases, restrictions on home resale, harsh park rules, and poor community facilities. Though somewhat less infrequent, the most formidable problem facing those on rented land is eviction and park closings. Evictions without tenant cause and closings can come with little notice, forcing residents, who live on low or fixed incomes, to spend large sums to move their home or lose it. In the future, evictions could become more frequent as the demand for land increases whether through environmental regulations or market demand for development. As land becomes scarcer, "the demand will grow for property currently in a low intensity use to be converted to some other use that will yield a greater net return to the owner," said Stan Duncan of the N.C. Department of Revenue.

In March 2002, a mobile home park in Holly Springs closed down. Residents were given two months notice, which is a month more than required by state law. Despite their name, however, mobile homes are not very mobile. It costs $1,500 to $5,000 to move them, and communities frequently prohibit or restrict the placement of older homes. Many families feared homelessness, and children, whose parents were fortunate enough to find new sites, had to change schools mid-year. Owner David Hawks had tried for more than three years to win approval from local officials to expand the development. "I've never in my life tried to improve something and met so much resistance," Hawks said. According to Hawks and other industry members, the expansion and renovation plans would have served as a national model. The land-lease community would have included gated entrances, walking trails, overflow parking areas, paved driveways, playgrounds, open space, a day-care center, and other amenities. As the battle between Hawks and local officials ended, residents scrambled to find new lots for their homes. Resident Trudy Savacool, a retired woman in her 70s, was lucky. With her savings, she found a nice lot in Willow Springs, a nearby town, for her home. "It's going to take everything I've got to move," Savacool said. "I just don't want to move. I've been here since 1988. But when they close the park, you've got to go."[47]

In New Hampshire, park closings often result in happier endings. The New Hampshire Community Loan Fund has helped organize and finance mobile home park cooperatives since 1988. The state has 52 cooperative parks, where the 2,500 members own the land where their homes sit. A co-op gives residents maximum control over their park, creating stronger and often cleaner communities. A co-op eliminates exorbitant rent increases and ensures that profits are used to improve community infrastructure. These co-op parks are made possible by the state's "right of first refusal" law. If an outside offer is made on a "for sale" mobile home park, the residents have the first option on the purchase under New Hampshire law. Residents have 60 days to form a cooperative and find funding. If the residents match the purchase offer, they become the new owners.[48]

The People's Court

In North Carolina, consumers have two places to address issues with their manufactured homes: the N.C. Manufactured Housing Board, which is run through the Department of Insurance, and the consumer protection division of the Attorney General's office. The Attorney General's office accepts all consumer complaints, whereas the Manufactured Housing Board addresses set-up, construction and installation issues.

The Manufactured Housing Board, which meets the new national dispute requirement, consists of nine members: the commissioner of insurance or his designee (chairman), a home manufacturer, a manufactured home dealer, a representative of the banking and finance business, a representative of the insurance industry, a manufactured home supplier, a set-up contractor and two representatives of the general public. Appointments are delegated between the Speaker of the House, President Pro Tempore of the Senate, the Governor and the Commissioner of Insurance. The board licenses all members of the industry –

dealers, salespersons, set-up contractors – and requires manufacturers and dealers to post bonds. The state will recover the bond money if a buyer of a manufactured home suffers any loss or damage due to improper actions by the manufacturer or dealer. The state requires at least a year warranty on all structural elements, including any modifications made by the dealer and proper set-up. Buyers have three business days to cancel their purchase, and purchase agreements must list a description, price, deposit, date sold, and interest rate. The legislature recently amended the law to require continuing education for industry members each year. The Board only addresses consumer complaints and licensing questions. The complaints must be made within the one-year warranty, otherwise consumers are sent to the Attorney General's office.

In 2001, the Board received 2,190 requests for consumer complaint forms and opened 880 consumer complaint cases (578 warranty issues and 302 deposit cases). The division closed 759 cases (through settlement or the determination of an insufficient claim) and inspected 556 homes. They held 161 pre-conference hearings where mediation occurs between the affected parties, and 36 docket hearings in front of a full board. In handling those 36 cases, the board issued five licenses, suspended one license, revoked four licenses and denied six licenses. The board issued two letters of reprimand and levied seven fines totaling $16,500. The board returned one deposit and ordered repairs in five cases. No action was taken on four cases and five cases were continued. Two cases were dismissed and six cases were cancelled.[49] Some complain that the board is too laden with representatives from the industry and does not take enough action. Carlene McNulty, a lawyer with the N.C. Justice and Community Development Center, suggested that the board include consumers and advocates. McNulty said the Board needed to resolve and enforce problems more effectively. Even Board members question its merit. "It's not nearly as strict as it should be, but we're further ahead today than five or 10 years ago," said Wesley Layton, a board member and dealership owner. "If we want to preserve our place in the housing industry, we have to move at a faster pace."

The Attorney General's office addresses complaints through the consumer protection division. Common complaints include the following: undelivered sales promises (e.g., furniture, home availability), incomplete contracts (e.g., missing interest rate, incomplete loan terms), and unreturned deposits. Consumers must request and complete an official written complaint form from the division before the division will begin an investigation. The Attorney General's office also distributes a list of tips for buying a manufactured home. They include the following:

- Get all verbal promises in writing on the contract.
- Do not sign incomplete documents, and retain a copy of all documents relating to the purchase of your home.
- Check out the dealer with the Attorney General's office or the Better Business Bureau.
- Make sure the set-up completion date is part of the contract.
- Within 30 days after moving into a home, make a list of items that need repairing and mail it to the dealership. If the company does not respond within 30 days, contact the Manufactured Housing Board or the Attorney General's office.

Equity Building

All homes can build equity for their owners, but there are no guarantees; many factors contribute to the appreciation and depreciation of homes. Land value, initial cost, size, proper maintenance, and urban location often increase the value of manufactured homes. Overcrowding, deterioration and relocation can decrease their value. Basic market forces of supply and demand and consumer preferences also determine appreciation and depreciation. Home value reflects the health of the

local housing market; unlike manufactured homes, stick-built homes are perceived to constantly appreciate, but they also can lose value in a weak housing market or poor location. Since it is a scarce resource, land tends to drive the market for both stick-built and manufactured homes. Homeownership, in general, allows people to invest in their community and receive a mortgage tax deduction. And for those with substandard credit and low savings, manufactured housing is often the only option for homeownership. In Henderson County, for example, a person earning the average county wage cannot afford to buy a stick-built home at the median selling price of new homes or existing homes. [50]

Land ownership is key to building equity for all homes. Land is a scarce resource, and according to basic economic theory, a low supply of a resource tends to increase market prices. William Agpar of Harvard University found that the value of land increased at a much higher rate than the housing structure. Between 1990 and 2000, a site-built home, including the land, increased in value from $100,000 to $142,499. The value of the actual unit increased by 2.9 percent in 2000 dollars. The value of the land increased by 23.9 percent. In that same time period, the value of a manufactured home, including land, increased from $37,800 to $53,549. The value of the land increased by 23.9 percent, while the structure increased in value by only 1.6 percent.[51]

Land is often more valuable in areas in close proximity to urban centers. Manufactured housing values on owned land in the Triad and Triangle regions are performing well, said Jack Coleman of Atlantic Appraisal Associates, a N.C. certified real estate appraisal company. As one travels farther east along the Interstate 40 corridor from Raleigh, the appreciation of manufactured homes becomes "becomes virtually stagnant until one encounters the impetus provided by the Wilmington market," said Coleman. "Due to the relative economic strengths of the areas, Raleigh performs at a higher level than Wilmington." In Wake County, 68 homes were sold (both new and used) between April 2000 and April 2001, and the average price was $89,908. Between April 2001 and April 2002, 67 homes were sold, and the average price increased by nine percent to $98,566. In rural areas, the recent recession and distance from urban centers caused manufactured home values and prices to decline or at best show very limited appreciation. Due to the saturation of the market by repossessed manufactured homes and an oversupply of new inventory, manufactured home values in rural areas are declining. In his report, Coleman stated, "Appraisers in Fayetteville, Wilmington, New Bern, Greenville and Rocky Mount noted overall flat markets at the current time. With the alleviating concerns over the economy ... the general consensus is that these markets will return to a more typical appreciation rate of two or three percent in the future; such a rate is typical of the general market and does not distinguish between manufactured and conventional stick-built homes."[52]

While land ownership is a leveling force between site-built and manufactured housing, the resale market divides them. Consumers expect to pay an equal amount or more for a "used" site-built home. Realtors list and sell both new and used site-built homes. There are many statistics on resale values for traditional homes. On the other hand, the resale market for manufactured homes is dismal. There are few established broker sales networks for used manufactured homes, forcing owners to sell the homes themselves and often settle for lower prices. According to Ted Boers of Datacomp USA, "markets that have an organized resale network ... have greater pricing stability and homes tend to sell for a higher price on average than in markets with no organized resale network."[53] Used manufactured homes are financed at an even higher cost, which changes the market of consumers for these homes. These obstacles to the resale of manufactured homes tend to push the selling price down, regardless of home value, and increase the rate of depreciation.

Tax assessments have no impact on market value; however, they are supposed to be based on market value. Therefore, tax assessments give some insight on appreciation and depreciation of home value. The state's emerging tax-based outlook on manufactured housing was sparked by

House Bill 253, which was passed by the General Assembly in December 2001. The statute amends the definition of real property and allows certain homeowners to relinquish their personal property title for a real estate deed. It also outlines the process for combining the home and the land into one real property deed. This combination opens the door for traditional lending institutions.

Classification as real property benefits counties and municipalities by increasing tax revenues, and benefits the homeowners by increasing access to tax deductions and traditional mortgages.[54] Manufactured homes, classified as personal property, depreciate each year according to a blue book value. Therefore, taxes dwindle as well. But real estate classification allows for regular assessment of the home, acknowledging market value and property upkeep. In North Carolina, individual counties want the revenue increases that accompany the conversion to real property, said Stan Duncan of the N.C. Department of Revenue. Property tax pays for community services like schools, and many manufactured homes are undervalued by the blue book method, Duncan said. A Cumberland County task force recently reported that the county could boost annual revenue $600,000 if it reclassified all eligible mobile homes.[55] Henderson County will reclassify all of its eligible manufactured housing next year. Mark Edney, the county's reappraisal director, expects county revenues to increase by at least a third. He expects individual taxes to double when the homes are changed from personal property to real property.[56]

This new law will force counties to treat more manufactured homes as real property, with tax assessments that accurately reflect current market value, not a scheduled blue-book depreciation. The new approach might change the old adage that manufactured homes will always depreciate. In fact, market values in some western North Carolina parks, such as River Wind, are skyrocketing. River Wind is a 134-home subdivision about 10 miles west of Hendersonville. According to Property Manager Bob McKelvey, the average selling price has increased over the past six years from $90,000 to $118,000. During his tenure, he has seen home sales range from $69,900 to $154,000. The homes are appreciating, McKelvey said, because the community is well maintained and the competition is fierce. "People are generally surprised when they come and look," he said. "The community doesn't fit their perceived notions."[57] However, appreciation is still the anomaly. In a 1995 Consumer Reports survey of more than 1,000 manufactured homeowners, two thirds replied that their manufactured home would sell for less than they had paid for it.[58]

Conclusion

Manufactured housing's persistent negative reputation does not reflect today's reality. Advances in technology have resulted in cost-effective, quality homes that are far different than yesterday's metal trailer. Those nondescript singlewide homes have given way to impressive multi-section homes with pitched roofs, brick masonry, built-on carports, and porches. Most homes are constructed with quality materials, and despite popular opinion, they can withstand natural disasters. In this aspect, today's manufactured homes are not the same homes built 20 or 30 years ago. According to a spokesman for R-Anell Homes, "construction methods are routinely changed based on each year's performance-based data, the industry is highly regulated, and building materials are significantly improved. The home built today has little correlation to the home built even five years ago."[59]

Manufactured housing paves an easy and oft-traveled path to homeownership for the lower income residents of North Carolina. In many areas of the state, the rental housing stock is often sparse and zoning is uncommon, opening the door for manufactured housing development. These homes offer a much-needed housing option for lower income residents. Most dealers will work from an estimated monthly payment that rivals a community's affordable rental properties and site-built starter homes. Consumers can select a wide range of home features and styles. Sales are quick, and private finance companies often accept poor credit records, although recently they have increased their standards. Where land costs too much, consumers have the option of placing their

home in rental communities or on family land.

However, the convenience of manufactured housing can give way to serious problems. Because of the quick approval process and high pressure sales, some consumers fail to think through their purchases and end up in homes that they cannot afford. Those who live on leased land can be evicted with only a month's notice, forcing them to raise a large sum to move the home or lose it. Sales are not strictly regulated, opening the door for fraud and other breaches of consumer protection. The state does not recognize all manufactured homes as real property. Many owners, including all who own homes on leased land, cannot benefit from the consumer protections of the Real Estate Settlement and Procedures Act or gain access to traditional mortgages.

The "trailer park" stigma will not disappear until the state, the industry and advocates pursue broad reforms. For example, consumers should be more informed about the N.C. Manufactured Housing Board and the state's one-year warranty law; the General Assembly should pass a right of first refusal law that gives residents 60 days to purchase the park they live in before it is sold to other buyers; and advocates and the industry should educate the public on manufactured housing as an affordable housing option. Massive consumer and industry education is key in improving the lives of those residents living in manufactured homes.

Almost one-fifth of the state's housing units are manufactured homes; government officials and consumer advocates must recognize these homes as a permanent feature of the N.C. housing market. In order to protect the state's residents, these leaders must pursue reforms in the areas of consumer education, state policy, financing programs, and even public perception. Manufactured housing should be a viable affordable housing option that enables the state's low-income residents to build equity and enjoy safe and decent shelter.

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What is the Effect of Commute Time on Employment?

An Analysis of Spatial Patterns in the New York Metropolitan Area

This study uses 1995 Nationwide Personal Transportation Survey (NPTS) data to determine the effect of commute time, a measure of accessibility, on employment for residents of the New York-Northern New Jersey-Long Island consolidated metropolitan statistical area (CMSA). The study uses two models to test the hypothesis that higher commute times are associated with lower employment probabilities, and considers both employed and non-employed individuals and private vehicle and public transit commute modes. In the first model, an ordinary least squares regression is used to predict commute time by auto and transit for all New York CMSA respondents (regardless of whether employed) on the basis of individual, household, neighborhood, and workplace characteristics. In the second model, a binary probit model estimates employment probability on the basis of individual, household, and neighborhood characteristics, as well as predicted commute time. The policy implications of the findings are discussed.

Nathan M. Macek, Asad J. Khattak, Roberto G. Quercia

Introduction

In many American cities, there is a spatial distinction within the metropolitan area between the locations of jobs (increasingly) in suburbs and edge cities and the residential location of low-income urban residents. Kain (*1*) first described this phenomenon when he articulated the spatial mismatch hypothesis. According to this theory, there is a mismatch between where residents of poor urban neighborhoods live and where potential jobs for these same individuals are located. A number of factors are believed to contribute to the creation and preservation of spatial mismatch, including segregation and discrimination in the housing market, job market discrimination, low levels of education, a lack of transit availability, and increasing decentralization of employment across metropolitan areas (*1*, *2*). Two additional factors to which the literature gives little attention are availability (or lack thereof) of childcare, and availability of government welfare benefits. Over the past three decades, a number of studies have attempted to quantify the incidence of spatial mismatch in American cities, often with conflicting findings.

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This study attempts to quantify the effect of various factors on commute time, a proxy for accessibility, and the effect of marginal change in commute time on the probability that an individual will choose to work. If increased commute time is indeed negatively related to employment probability, then enactment of prescriptive policies is warranted to increase individuals' employment probabilities by decreasing commute times of residents at risk of having low employment probabilities.

Nationwide Personal Transportation Survey (NPTS) data from 1995 were analyzed at a disaggregate (metropolitan) level of analysis, within one regional economy. Data from the New York-Northern New Jersey-Long Island consolidated metropolitan statistical area (CMSA), the metropolitan area for which the greatest quantity of NPTS metropolitan-level data was available, were used to conduct the study. Data from 12,217 total New York CMSA survey respondents were pared to 7,942 cases of study individuals of working age, and of those, 5,395 employed individuals had sufficient data for inclusion in the model. An ordinary least squares regression estimated the one-way commute times for these employed individuals based on a number of personal, household, and neighborhood characteristics. The results of this estimation were then fitted to predict commute times of all 7,942 cases of both employed and non-employed residents between the ages of 16 and 59. Then a binary probit regression model estimated the effect of various personal, household, and neighborhood characteristics, as well as commute time, on employment probability. An analysis of the marginal effect of change in commute time on individuals' employment probabilities is presented.

Literature Review

Spatial mismatch is a widely studied subject, with numerous investigations of the phenomenon. The question of whether or not spatial mismatch actually exists will probably never be answered definitively. While some studies conclude that spatial mismatch is a legitimate, quantifiable phenomenon, other research finds no evidence to support the spatial mismatch hypothesis. Studies with findings supporting the spatial mismatch hypothesis generally have stronger methodologies, having adequately controlled for external factors (*3, 4, 5, 6, 7*). Explanation of these studies and their methodological strengths and weaknesses follows.

Kain (*1*) was the first to quantify the occurrence of spatial mismatch in a study in which he demonstrated that a statistically significant negative correlation exists between the percentage of blacks employed in a particular employment zone and the distance of the nearest ghetto. Kain's 1968 research is the seminal work on spatial mismatch; it would later be complimented by more complete studies of the subject.

Three early studies supported the spatial mismatch hypothesis, but had significant methodological shortcomings. Research by Alexis and DiTomaso (*3*) found that blacks in Chicago had longer commute times than whites, but the study did not control for modal choice. A study by Goodman and Berkman (*4*) used Panel Study of Income Dynamics data while research by O'Hare (*5*) used American Housing Survey and 1977 NPTS data to demonstrate longer commutes for blacks than whites, though both studies did not include key explanatory variables.

Gordon et al. (*6*) used 1977 and 1983-84 Nationwide Personal Transportation Study data to measure the aggregate incidence of spatial mismatch across similarly sized metropolitan areas. They find that blacks and other minorities have commuting patterns (including commute time and distance) that are similar to other workers in these metropolitan areas, which indicates that spatial mismatch is non-existent. But their study does not control for such factors as density or mode.

Another study, by Taylor and Ong (*7*) also found no incidence of spatial mismatch. This investigation compares the difference between commute time and commute distance for individuals of various races by controlling for such factors as age, income, education, urban area type, transit availability, and sex. The study uses 1977-78 and 1985 American Housing Survey data to track changes over time. Taylor and Ong calculate stable

and declining commute times and distances by minority workers between 1977-78 and 1985, contradicting the spatial mismatch hypothesis. They do find, however, that "slow public transit" may contribute to longer average commute times for residents of poor urban neighborhoods. The study does not account for the employment probability of non-employed individuals, however, which can bias coefficients.

Holzer (*2*) examined the wealth of empirical evidence generated around the topic of spatial mismatch in his survey of various models. These studies attempt to calculate such dependent variables as employment probability, unemployment rates, earnings and income, and income ratios. Holzer concludes, "after more than 20 years of empirical research on the spatial mismatch hypothesis, considerable disagreement and uncertainty remain on many issues" (*2*, 117). He lists some conclusions which can be "safely drawn" from existing research, including continuing decentralization and employment in the United States, suburbanization and declining residential segregation of blacks, decreased access to employment by blacks in central cities compared to suburban residents (typically white and black), and higher wages for blacks in the suburbs than in the central city.

Workplace Accessibility and Employment

McLafferty and Preston (*8*) examined Public Use Microdata Sample data for Northern New Jersey to examine the effect of spatial mismatch on African-American and Latina women. The researchers found that spatial access to jobs was poorer for minority women than for white women, but was better for minority women than for minority men. While this study affirms that spatial mismatch indeed exists, it does not consider non-employed individuals in its methodology, as ours does.

Green and James (*9*) find no evidence of spatial mismatch in greater Washington, D.C., as their computed accessibility index finds no significant difference between the results for blacks and whites. The study uses an aggregate gravity model instead of disaggregate level commute time data to determine access.

A study by Holloway (*10*) employs a methodology similar to our study to determine the effect of job accessibility on male teenage employment between 1980 and 1990. The author concludes that accessibility became less of a factor in the employment of inner-city teenagers over the course of the 1980s as black male teens lost the "*advantage* of accessibility" rather than overcame the "*disadvantage* of *in*accessibility" [Holloway's emphasis]. The study does not control for mode, however.

Cervero (*11*) attempts to characterize trends in job accessibility in various San Francisco Bay area neighborhoods between 1980 and 1990. The study found that disparities in job accessibility between high and low access neighborhoods widened during the period of study, and that wealthy neighborhoods were often more accessible to jobs for which residents were qualified than poorer neighborhoods.

Sanchez (*12*) indicates that access to public transit is a significant factor in determining average rates of labor participation within the cities of Atlanta and Portland. He showed that residents living in census block groups with timely, proximate transit service—including bus and rail—were likely to be employed a greater number of weeks per year, on average, than residents of census block groups with lesser transit service.

Khattak et al. (*13*) are the first to correct for sample selection bias in commute time and distance research by estimating employment probability before estimating time and distance. Their study, which utilized a two-step modeling methodology, found that in aggregate residents of poor urban neighborhoods have greater commute times and distances than suburban and more affluent urban residents, although the additional distance was only 1.5 miles and the additional time was only 3 minutes for poor urban residents. Data from over 95,000 individual respondents to the 1995 Nationwide Personal Transportation Study were analyzed using a variety of regression models normalized to account for such factors as income, race, commute

mode, and various residential neighborhood characteristics. These findings are significant, but further study of the incidence of spatial mismatch at the metropolitan level is warranted.

Overall, these aggregate as well as disaggregate studies indicate that evidence for spatial mismatch in the employment-accessibility context is mixed. This study builds on the research of previous accessibility and employment studies to investigate the link between commute time and employment within one metropolitan area by considering both employed and non-employed segments of the population and controlling for mode.

Is accessibility still an issue?

In recent years, the United States economy has been expanding quickly, with rising average incomes and low unemployment (the national rate of which hovers around 4.0 percent). The 2000 Economic Report of the President (*14*) indicates that median family income for whites, blacks, and all races was higher in 1998 than any other year in the previous 18 years. Poverty was also lower for blacks, whites, and all races in 1998 than any other year during the previous 18 years. Despite economic expansion, 12.7 percent of Americans of all races and 26.1 of blacks lived in poverty in 1998, and the 1999 unemployment rate for blacks stood at 8.0 percent, 3.8 percentage points higher than the nationwide unemployment rate for all civilian workers (*14*). Given the persistence of pockets of poverty and unemployment in America, concerns associated with spatial mismatch and the employment patterns of urban residents remain relevant despite high economic times.

Study Methodology

A number of variables factor into the probability of whether an individual will be employed, including the individual characteristics of mode, household characteristics of race, and neighborhood characteristics of area type of neighborhood of residence (urban, suburban, etc.), median household income of block group, and job density in household census tract. Some person-specific external factors may also affect one's likelihood of employment, including segregation and discrimination in the housing market and job market discrimination. These person-specific external factors are represented by the household characteristics and neighborhood characteristics. In addition, external factors common across individuals could also be expected to contribute to one's employment decision, including the job market, macroeconomy, and government programs. Figure 1 maps this relationship.

Using indicators of these individual and person-specific external influencing characteristics and assuming that external influencing characteristics

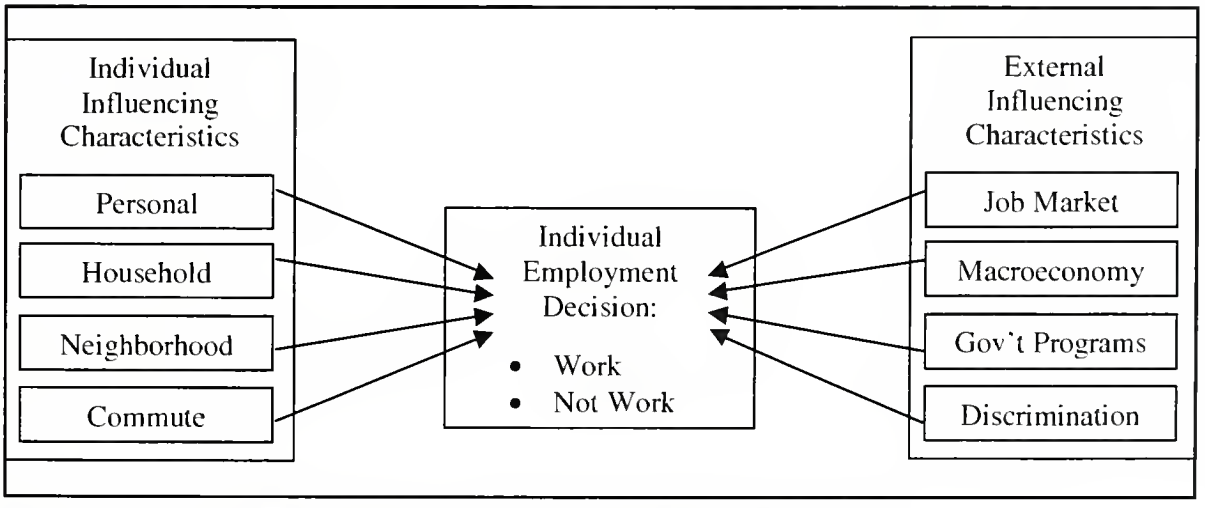


Figure 1: *Relation between characteristics influencing individuals' work decision.*

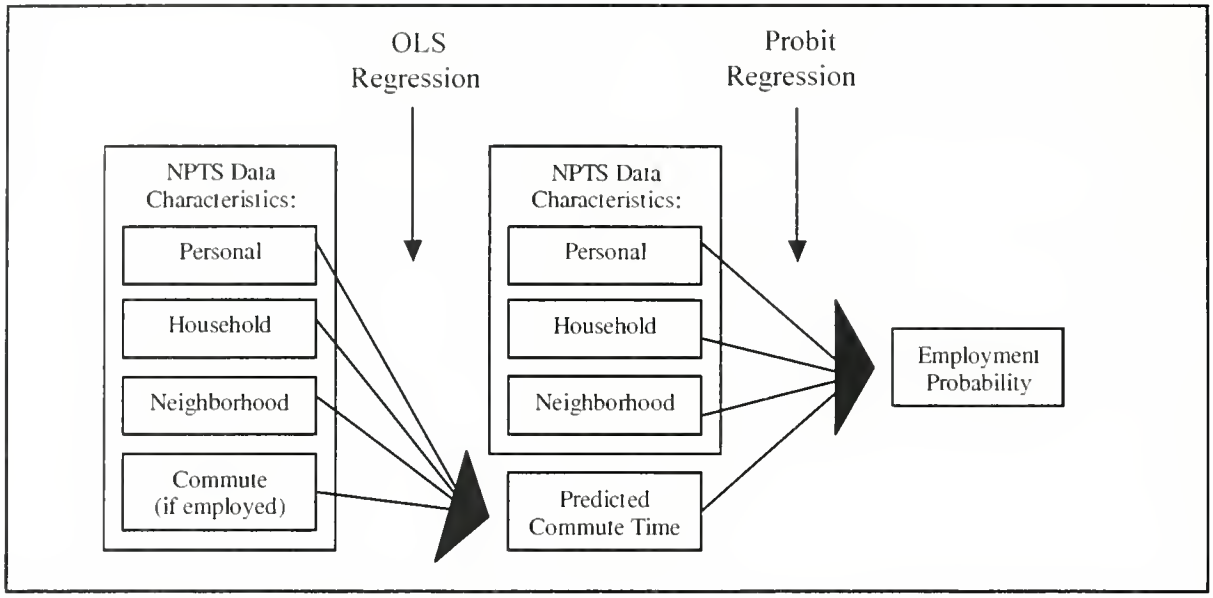


Figure 2: *Study methodology schematic diagram.*

are constant at any one time in any one metropolitan area, it is possible to estimate the likelihood that one would choose to work. Unfortunately, while indicators of individuals' personal, neighborhood, and household characteristics are readily available, commute characteristics are only possible for working individuals, as non-working individuals have no job to which they commute. Using 1995 Nationwide Personal Transportation Survey data, however, it is possible to use individual characteristics to predict commute characteristics. These predicted commute characteristics may then be regressed with individual, household, and neighborhood characteristics to estimate the likelihood of working. Figure 2 maps this relationship, which is the conceptual framework for this study.

As spatial mismatch is a localized phenomenon, this study considers the effect of accessibility at the metropolitan level. The unit of analysis is the individual person level. The data analyzed is a subset of 1995 Nationwide Personal Transportation Survey personal and household data files, a national survey of intra-city travel characteristics collected every five to seven years by the Bureau of Transportation Statistics. All residents of sampled households were surveyed regarding such personal travel characteristics as auto ownership and (if a worker) commute mode, time, and distance, as well as demographic, household, and neighborhood characteristics.

This scope of this study is limited to the New York-Northern New Jersey-Long Island consolidated metropolitan statistical area. With 12,217 cases of surveyed individuals, the New York CMSA has the largest sample size of all NPTS metropolitan areas, providing the quantity of data necessary to predict commute time and estimate employment probability with a high level of confidence. The survey sample is restricted to individuals of working age (16 to 59), creating a study sample of 7,942 cases.

The reported commute time serves as the measure of accessibility, which is one of the best measures of spatial mismatch according to Holzer (*2*). Commute time was ascertained from NPTS survey respondents through the question "How many minutes does it usually take to get from home to work, not including time it takes to drop off children or make other stops?" While commute distance is often used as a measure of accessibility, commute time better accounts for perceived quality-of-life and residential location issues that become a factor in individual's employment choices, especially for individuals who would rely on public transportation to commute to work. Theoretically, there may be some simultaneity

between commute time and mode choice, as one's mode choice would be affected by the projected commute time via various modes. Yet one's commute mode affects the length of one's commute nonetheless, so our model uses commute mode as predictor of commute time. This is consistent with the methodology employed by a number of other researchers (*4, 5, 7, 8, 13*).

A key set of variables that explains commute time is the area type of the place of residence. The NPTS data groups place of residence cells (or neighborhoods) into five area types: urban; second city; suburban; town; and rural. Population density decreases along the spectrum between urban and rural. Urban and second city area types are population centers or locations in which the population density is greater or as great as the eight neighboring cells.

Description of New York Metropolitan Area

The New York-Northern New Jersey-Long Island, NY-NJ-CT-PA consolidated metropolitan statistical area (CMSA) includes a population of over 19.8 million people spread over 10,166 square miles (*15*). The CMSA includes 11 primary metropolitan statistical areas in parts of four states, New York; New Jersey; Connecticut, and Pennsylvania.

According to the U.S. Census Bureau State and Metropolitan Area Data Book (*15*), the New York-Northern New Jersey-Long Island CMSA was 74.2 percent white, 19.3 percent black, 6.2 percent Asian or Pacific islander, with 16.8 percent Hispanic origin as of June 1, 1996. In 1993, the date for which most recent data are available, 14.7 percent of persons in the CMSA were living below the poverty level. As of June 30, 1996, Per capita personal income averaged $29,021, while annual pay averaged $40,089. The civilian labor force included nearly 9.7 million persons, or 49.0 percent of the total CMSA population. In both 1995 and 1996, the unemployment rate stood at 6.5 percent.

Description of the Sample

Commute time is the reported time to travel from home to work at whatever time of the day one starts working, not including the time it takes to wait for public transit. About 76 percent of the sample is employed. Commutes of longer than 180 minutes were recoded as 180 minutes. The average reported commute time was 32.4 minutes. Descriptive statistics of all key variables are presented in Table 1.

Explanatory variables of commute time

Table 1 shows the descriptive statistics of individual, household, neighborhood, and commute characteristics used as variables to predict commute time. Just over 70 percent of surveyed New York CMSA residents were white and 13.3 percent were black. (Note that Hispanic origin is not included as a race because the U.S. Census Bureau considers it an ethnicity. Persons of Hispanic origin may be expected to fall within any of the four categories of race.)

The majority of residents (42 percent) lived in an urban neighborhood while 26.5 percent resided in suburbs. Of employed workers surveyed, 62.5 percent commute by private vehicle, 21.8 percent use public transit, and around five percent walk or bike to work. (Mode was not reported for approximately 10 percent of employed survey respondents.) About 58 percent of employed respondents commute to work during morning rush hours between 6:00 and 8:30 a.m.

Table 2 (omitted) illustrates various descriptive statistics for survey respondents disaggregated by area type. Suburban neighborhoods have the highest rate of employment at 80.5 percent. Urban neighborhoods have the lowest employment rate at 71.4 percent. Average one-way commute times average 35.4 minutes for urban residents and 31.2 minutes for suburban residents. Blacks are more likely to live in urban areas, comprising 25.1 percent of the urban population.

Regression Analysis

This study uses a two-step process to estimate the effect of commute time on employment probability. An ordinary least squares model

Variable	Type	Mean	Standard Deviation	Minimum	Maximum
Commute Characteristics (N=5,395)					
Commute Time	Scale	32.37	25.88	0	180*
Private automobile	Binary	0.478	0.5	0	1
Public transit use	Binary	0.167	0.373	0	1
Walk or bike	Binary	0.0379	0.191	0	1
Other mode of transportation	Binary	0.0108	0.104	0	1
Leave during morning rush hours (between 6:00 and 8:30 a.m.)	Binary	0.443	0.497	0	1
Demographics (N=7,942)					
Single	Binary	0.136	0.343	0	1
Age Scale	37.49	11.39	16	59	
Employed	Binary	0.764	0.424	0	1
Household characteristics (N=7,942)					
White	Binary	0.702	0.457	0	1
Black	Binary	0.133	0.34	0	1
Asian	Binary	0.0398	0.195	0	1
Other race	Binary	0.102	0.303	0	1
Number of adults	Scale	2.32	0.91	1	7
Number of drivers	Scale	1.92	1.01	0	7
Homeowner	Binary	0.624	0.484	0	1
Household family income	Scale	$54,313	30,974	$2,500	$110,000*
Residential neighborhood characteristics (N=7,942)					
Urban	Binary	0.421	0.494	0	1
Suburb	Binary	0.265	0.441	0	1
Second city	Binary	0.135	0.341	0	1
Town	Binary	0.161	0.367	0	1
Rural	Binary	0.0179	0.133	0	1
Population density (persons/sq. mile)	Scale	13,175.18	11,852.12	50	30,000
Median household income in census block group (in $10,000s)	Scale	4.9495 (49,495)	1.845	1.5	8
Ninety or more percent black in census group	Binary	0.0583	0.234	0	1
Job density in household census tract (in 1,000s of worker/sq. mi.)	Scale	2.302 (2,302)	1.98	0.025	5
Workplace characteristics (N=5,395)					
Job density in workplace census tract (in 10,000s of workers/sq. mi.)	Scale	1.45 (14,500)	1.914	0.0025	6

* data points above this maximum were recoded at this value

Table 1: *Descriptive statistics for key variables.*

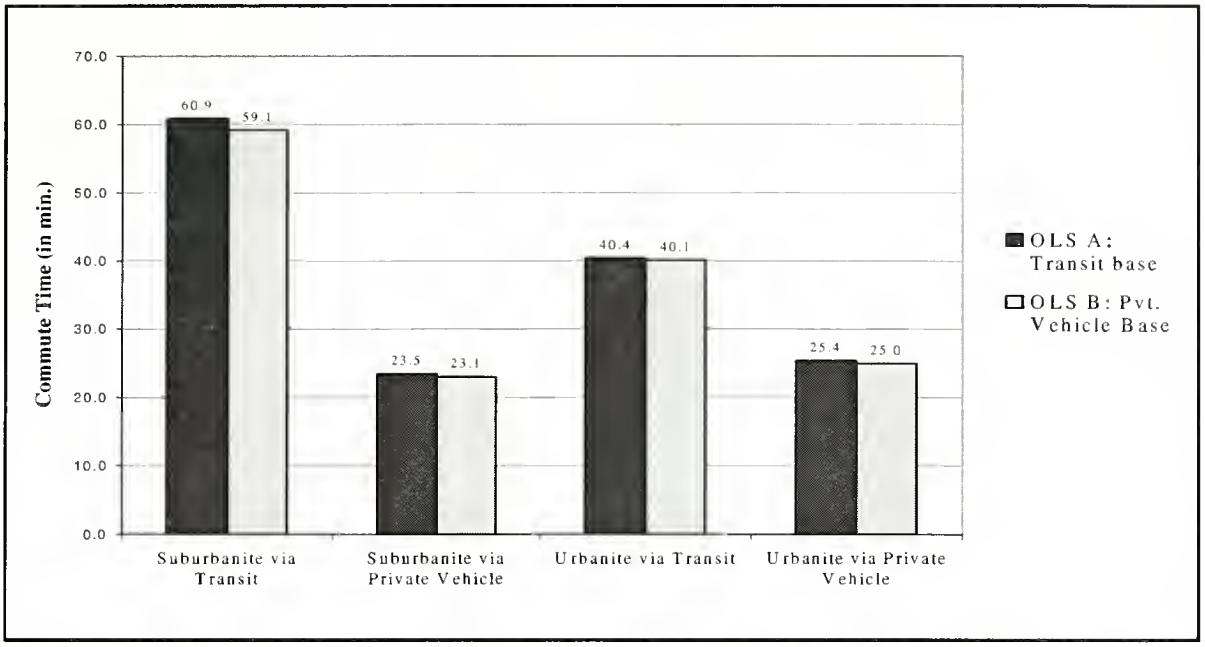


Figure 3: *Predicted average one-way commute times of New York CMSA residents (N=7,942).*

predicts the commute time on both working and non-working individuals, and a binary probit model estimates employment probability. Two sets of analysis are performed: one in which private vehicle is the base mode, and one in which public transit is the base mode. These models permit estimation of employment probability with both private automobile and public transit as assumed modes for non-workers.

Ordinary least squares models predicting travel time

Two ordinary least squares regression (OLS) models use personal, household, neighborhood, and workplace characteristics to explain commute time of the basis of 5,395 resident respondents of working age who reported to be employed full or part time, and for whom commute time was reported. This study builds on previous research by Khattak, et al. (2000) by using two different OLS models. The first (OLS Model A) predicts commute time when public transit is assumed to be the commute mode of non-workers. The second (OLS Model B) predicts commute time when non-workers are assumed to commute via private vehicle. These models are presented in Table 3.

According to OLS Model A (in which the base mode is private vehicle), use of public transit has the largest influence on commute time. All else equal, average commute via public transit is 37.4 minutes longer than the average commute via private vehicle. Commuters living in urban neighborhoods experience average commutes roughly two minutes longer than suburbanites, all else equal. A commute during the morning rush is, on average, 3.5 minutes longer.

When compound effects of mode, neighborhood area type, and the interaction variables of mode and neighborhood area type are considered together, the average commute of a suburbanite via transit is 60 minutes while the average commute of a suburbanite via private vehicle is 23 minutes. The average commute of an urbanite via transit is 40 minutes, while an urbanite's average commute via private vehicle is 25 minutes. The predicted average commute times for Model A and Model B are illustrated in Figure 3. As expected, the predicted average commute times of Model B (in which public transit is the modal base) do not differ significantly from Model A. Slight differences between models are due to variations in the parameters of mode and area type interaction variables.

	OLS Model A: *Private vehicle as base mode*		OLS Model B: *Public transit as base mode*	
Variable	**Coefficient**	**Std. Error**	**Coefficient**	**Std. Error**
Constant	23.512***	1.521	59.145***	2.152
Individual characteristics				
Public transit use	37.354***	1.795	Base	Base
Private Vehicle	Base	Base	-36.051***	1.691
Walk or bike	-15.656***	2.498	-51.828***	2.855
Other mode of transportation	9.664***	2.492	-11.887***	2.49
Mode missing	21.559**	9.745	-3.96	9.777
Leave during morning rush hours (6:30 to 8:00 a.m.)	3.447***	0.625	3.516***	0.626
Household characteristics				
Black	4.083***	1.125	3.964***	1.126
Asian	1.432	1.586	1.287	1.588
Other	3.176**	1.094	3.360**	1.095
Race missing	3.704	2.105	3.818	2.108
Residential neighborhood characteristics				
Urban	1.906	1.078	-19.048***	1.746
Second city	0.277	1.026	-3.957**	2.649
Town	1.867	1.013	11.331**	3.339
Rural	0.577	2.345	45.541**	21.843
Median household income in census block group (in $10,000s)	0.0458	0.2	0.0819	0.2
Ninety or more percent black in census group	0.514	1.574	0.671	1.576
Job density in household census tract (in 1,000s of worker/sq. mi.)	-1.826***	0.232	-1.791***	0.233
Workplace characteristics				
Job density in workplace census tract (in 10,000s of workers/sq. mi.)**	2.442***	0.172	2.516***	0.172
Interaction variables				
Urban & public transit	-23.370***	1.99	N/A	N/A
Second & public transit	-6.067	3.298	N/A	N/A
Town & public transit	13.563***	4.165	N/A	N/A
Rural & public transit	43.808**	21.919	N/A	N/A
Urban & private vehicle	N/A	N/A	20.977***	1.891
Second & private vehicle	N/A	N/A	4.408	2.843
Town & private vehicle	N/A	N/A	-9.420**	3.458
Rural & private vehicle	N/A	N/A	-44.776**	21.947
Urban & walk or bike	0.576	2.991	21.469***	3.273
Summary statistics	$R^2 = 0.298$ Adj. $R^2 = 0.295$ F-stat = 103.57 N = 5,395		$R^2 = 0.296$ Adj. $R^2 = 0.293$ F-stat = 102.47 N = 5,395	

*** p=<0.001, ** 0.001<p=<0.05; Mean travel time for workers = 32.4 minutes

Note: The base for race is white; the base for area type is suburb. When an individual is not employed, the job density in workplace census tract = 0.7535, the mean New York CMSA workplace job density.

Table 3: OLS regression model with one-way commute time as dependent variable.

Examining other coefficients of interest in OLS Model A, one finds that black residents on average face a commute that is four minutes longer than whites. When the average commuter's job density in the census tract of their workplace increases by 10,000 persons, their commute time increases by 2.4 minutes, all else equal.

OLS Model A and OLS Model B both predict the commute time of all survey respondents, regardless of whether they work. Model A, using private vehicle as its base, assumes that non-working individuals would commute via private vehicle: Model B assumes non-workers would use public transit. Descriptive statistics of the predicted commute times of both models, as well as the reported commute times and the residuals between reported and predicted times, are shown in Table 4 (omitted).

When private vehicle is the base mode (OLS Model A), average predicted commute time for all commuters is 36.3 minutes, 12.1 percent higher than the 32.4 minute average reported commute times for working individuals. When public transit is the base mode (OLS Model B), average predicted commute time is 39 minutes, 14.2 percent higher than the average reported commute times for workers. Predicted commute times range between -0.3 and 120 minutes in OLS Model A, and -1.7 and 120 minutes in OLS Model B. (Note that only one case of predicted commute time A and five cases of predicted commute time B out of 7,942 total predicted cases had negative predicted commute times. In each instance, the negative predicted commute times were for employed individuals residing in urban areas and commuting to work by walking or bicycling.) The residuals, of course, average 0, with a standard deviation of 12.5 for OLS Model A and 15.9 for OLS Model B. The range of residuals indicates that the models' predicted commute times at the extremes were approximately 81 minutes shorter and 160 minutes longer than actual reported for OLS Model A, and 76 minutes shorter and 161 minutes longer for OLS Model B. These predicted commute times for each survey individual, regardless or whether the individual is employed or not, serve as independent variables in the binary probit regressions.

Binary probit models estimating employment probability

Two binary probit regressions are used to estimate employment probability. The binary probit regression model is more appropriate than a least squares linear probability model because the dependent variable is restricted between 0 (=not employed) and 1 (=employed). The models were estimated with the 7,942 New York CMSA cases of individuals of working age for which adequate data to run the model was available. Probit Model A uses commute times predicted by OLS Model A to estimate employment probabilities when private vehicle is assumed to be the mode of non-workers. Probit Model B uses the commute times predicted by OLS Model B to estimated employment probabilities of respondents when public transit is assumed to be the mode of non-workers. The model is shown in Table 5. Note that while sex, age, education level, race, neighborhood area type, and single-parent status are included as variables, personal income is excluded, as reliable personal income data is not available for non-working individuals.

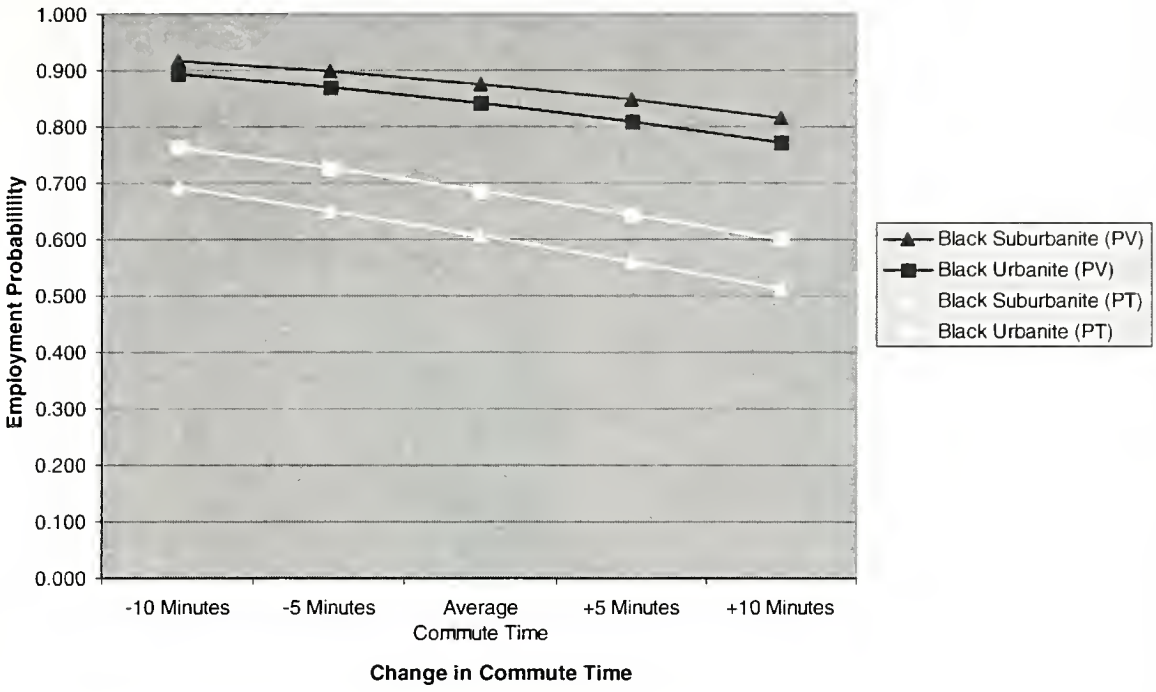
Most significantly, both models indicate a negative correlation between commute time and employment probability. The models also show that males are more likely than females to be employed. In addition, higher levels of education are correlated with increased employment probabilities (with a negligible decline in employment probability in both probit models between individuals with bachelors' degrees and graduate or professional degrees). Single parents of children aged zero to five years are less likely to be employed. Interestingly, both models indicate that blacks are more likely to be employed than whites controlling for other factors including predicted commute time, a result that contradicts suppositions that discrimination and segregation would have a negative effect on the employment probability of blacks vis-à-vis whites. Residents of urban and second city neighborhoods are less likely to be employed than suburban residents. The commute time coefficients in both models are very close (-0.046 in Probit Model A and –0.038 in Probit Model B), an indication that travel time effects on

Variable	Probit Model A: *Private vehicle as base mode*			Probit Model B: *Public transit as base mode*		
	Coefficient	Standard Error	Marginal Effect	Coefficient	Standard Error	Marginal Effect
Constant	1.930***	0.09	0.487	1.789***	0.089	0.45
Individual characteristics						
Male	0.639***	0.037	0.161	0.599***	0.037	0.151
Youth (16-18)	-1.296***	0.083	-0.327	-1.282***	0.083	-0.322
College-aged (18-24)	-0.489***	0.052	-0.123	-0.494***	0.052	-0.124
High school education	0.447***	0.066	0.113	0.458***	0.065	0.115
Some college or associates degree	0.566***	0.068	0.143	0.581***	0.068	0.146
Bachelor's degree	0.840***	0.071	0.212	0.863***	0.071	0.217
Graduate or professional degree	0.835***	0.079	0.211	0.861***	0.079	0.216
Education data missing	0.282***	0.084	0.071	0.288***	0.083	0.072
Single parent of a child between 0 and 5	-0.449***	0.118	-0.113	-0.523***	0.115	-0.132
Single parent of a child between 6 and 18	-0.00098	0.101	0.00025	-0.036	0.099	-0.009
Household characteristics						
Black	0.157**	0.055	0.04	0.112**	0.054	0.028
Asian	-0.085	0.088	-0.021	-0.11	0.087	-0.0277
Other	0.0634	0.06	0.016	0.04	0.058	0.01
Race missing	0.0027	0.113	0.0007	-0.038	0.112	-0.01
Residential neighborhood characteristics						
Urban	-0.177***	0.048	-0.045	-0.513***	0.05	-0.129
Second city	-0.095	0.063	-0.024	-0.133**	0.064	-0.033
Town	-0.015	0.059	0.0039	0.214***	0.063	0.539
Rural	-0.029	0.148	-0.0072	10.117***	0.207	0.281
Commute Time						
Commute Time (minutes)	-0.0457***	0.0014	-0.011	-0.038***	0.0012	-0.956
Summary statistics						
	Log likelihood function = -3,294.653 Restricted log likelihood = -4,336.991 Chi-squared = 2,084.676 N = 7,942			Log likelihood function = -3,323.674 Restricted log likelihood = -4,336.991 Chi-squared = 2,026.633 N = 7,942		

*** p=<0.001, ** 0.001<p=<0.05

Note: The base gender is female; the base age group is adult (age 25 to 59); the base education is no high school degree; the base family situation is 'not a single parent'; the base race is white; the base area type is suburb

Table 5: Probit equations estimating the likelihood of being employed



Notes

1. Computation of employment probability based on race, sex, education level, and residential area type parameters predicted by Probit Model A and Probit Model B.
2. All four series are black males with a high school level of education or higher.
3. Average commute time varies with mode and residential area type based on average commute time predicted by OLS Model A and OLS Model B.
4. Average predicted commute time of black suburban private vehicle commuter = 28.9 minutes; black urban private vehicle commuter = 26.9 minutes; black suburban public transit commuter = 66.5; black urban public transit commuter = 43.7 minutes.

Figure 4: *Employment probabilities of urban and suburban black males.*

employment are not significantly different between the two models.

Figure 4 illustrates the effect of five- and ten-minute changes in commute time on the employment probability of both urban and suburban blacks using private vehicles and public transit to commute to work. In this graph, only a comparison of blacks is shown, as the spatial mismatch hypothesis focuses on the accessibility of urban blacks to employment. The trend lines of urban and suburban whites appear quite similar, however. In this figure, employment probability is computed based on race, sex, education level, and residential area type parameters predicted by Probit Model A and Probit Model B. All four series are black males with a high school education or higher. The average predicted commute time is predicted by OLS Model A and OLS Model B and varies with mode and residential area type. Average predicted commute time of black suburban private vehicle commuters equals 28.9 minutes; for black urban private vehicle commuters equals 26.9 minutes; for black suburban public transit commuters equals 66.5 minutes, for black urban public transit commuters equals 43.7 minutes.

The graph shows that the employment probability of black urbanites and suburbanites using private vehicles to commute to work does not differ significantly. But the predicted employment probabilities of urban and suburban commuters

using public transit is significantly lower than the employment probability of commuters using automobiles. According to this estimation, the employment probability of black urbanites reliant upon transit is at best 0.76 when the commute time is ten minutes shorter than average, and drops to 0.60 when the commute time is ten minutes longer than average, a range of 16.2 percentage points. This trend is even more pronounced for black suburban transit users, whose employment probability ranges from 0.69 when the commute is ten minutes shorter than average to 0.51 when the commuter is ten minutes longer than average, a range of 18 percentage points. These results show that urban and suburban residents reliant on public transit are most at risk of non-employment due to poor workplace accessibility. This finding may indicate that it is not employment discrimination but residential segregation and/or decentralization of workplaces across the metropolitan area that may have the greatest effect on employment probability.

Conclusion

This paper investigates the link between commute time and employment probability, focusing on urban and suburban residents in the New York-Northern New Jersey-Long Island consolidated metropolitan statistical area. The hypothesis was that an increase in an individual's commute time, all else equal, would result in a decrease in that person's employment probability. The study shows that predicted commute time is indeed negatively correlated with employment probability, findings which support the spatial mismatch hypothesis. Notably, the employment probability of urban and suburban residents assumed to be reliant upon transit to commute to work is lower than residents of any other area type. The results, however, do not indicate a demonstrable difference in employment probabilities between blacks and whites.

Given the demonstrated effect on individuals' employment probabilities when non-workers are assumed to commute via transit, efforts to reduce commute time (a proxy for accessibility) may result in somewhat increased employment probabilities. Commute times may be reduced through a number of prescriptive policies, including increased availability and reliability of transit; provision of alternative means of transportation to work; and increased proximity of new low-skilled work opportunities to at-risk areas.

Study limitations and further study

This study focuses exclusively on the New York-Northern New Jersey-Long Island CMSA. The New York area arguably has a higher degree of transit availability and reliability, especially in urban neighborhoods, than any other metropolitan area in the United States. Study of a more typical American metropolitan area, such as Chicago, Philadelphia, or Washington, might better represent the extent of the effect of spatial mismatch on employment probabilities in large metropolitan areas. Additionally, study of smaller metropolitan areas without fixed-guideway transit systems would indicate the effect in areas in which the only practical transit option is the bus.

This study uses 1995 NPTS data. One limitation of NPTS data is the survey question used to ascertain respondents' commute times: "How many minutes does it usually take you to get from home to work." The question asks respondents to make an estimation based on perception, which may or may not be correct. In addition, the question does not explicitly instruct respondents to exclude transit wait time from their reported commute time.

There are a number of other limitations within this dataset. This survey asks ordinary citizens to report their travel behaviors. Responses may be skewed as memory loss affects individuals' ability to correctly recall facts and figures. Additionally, travel time perceptions may result in rounding-off errors or incremental perceptions of delay that circumstantially vary.

Furthermore, while economic numbers indicate that the poverty and unemployment still exists among blacks and in urban areas, more current data (such as 2000 NPTS data, released in 2001) might indicate whether the effect of spatial mismatch on employment is more or less pronounced today compared to 1995.

This study also considers only personal, neighborhood, household, and commute characteristics in estimating employment probabilities. Key determinants of whether individuals will choose to work are attributes of the job to which individuals would commute, especially income and fringe benefits. A more precise model to estimate employment probability might use predicted income and other workplace factors as independent variables to correct for this. In absence of further research at this time, however, this study provides evidence that commute time indeed has an effect on employment probability, and that measures to increase accessibility could improve the employment probability of residents of urban neighborhoods.

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Finding New Solutions in Planning with Sustainable Development: A Case Study in Atlanta and Charlotte

The purpose of this study is to describe how sustainable development offers a new vision for planning. The paper defines the vision, explains the principles of sustainable development, and evaluates the plans of the Charlotte and Atlanta metropolitan areas to determine how well their policies support sustainable development. The Atlanta and Charlotte metropolitan areas were chosen for the evaluation because these two cities continue to experience rapid economic growth and are dominated by sprawl style development. Through the explanation of sustainable development and its application as a new vision, and through the use of principles of sustainability in analyzing the planning practice in two case studies, this article demonstrate how the sustainable development concept offers the breadth and analytical capability to lead the field into a new direction that will enable planning to bring life and health to our communities. The article concludes with recommendations for how to better incorporate a more balanced representation of sustainable development values.

Bradley P. Decker

Introduction

Planning needs a new vision. Planning needs a broad picture of how things could be if we apply new tools and techniques to our environment. This new picture is not a utopian dream that could be feasible if there were no political, social, environmental, or economic constraints. The new vision will have to incorporate these constraints into a large goal of how our future could be if we work together to create innovative steps to live in communities that balance the economic, social, and environmental values and bring a higher quality of living to present and future generations.

Planning influences the state of our communities through many different mechanisms such as regulations, incentives, standards, and requirements. Planning uses these mechanisms to organize land uses, design development patterns, provide mobility and accessibility, provide and protect public goods and services, and encourage and manage growth. Planners work toward these goals in an attempt to create and maintain a high quality of living within a community.

In actuality, planning's impact has been both positive and negative. The positive attributes that the field has contributed include planned communities, parks, regional plans, affordable housing, and public participation programs. Examples of these are new towns such as Reston, VA, which are designed to increase social interaction and provide

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high accessibility to residents; inner city parks such as Central Park in New York, NY; regional plans such as those created by the Regional Planning Association of America in the 1920s; and public participation programs that are an integral part of most urban development plans. All of these examples have made a strong impact on our built and human environment and have successfully increased people's quality of living.

The planning field has also greatly contributed to the current type of development pattern that is the most common in the United States- sprawling development. Sprawl is characterized as low-density, single-use development that is linked by roads and interstates. This type of development is an inefficient use of land and has many negative externalities. These effects include dependency on the automobile, traffic congestion, excessive public expenditures on infrastructure, depletion of open space, social isolation, lack of affordable housing and many other problems. Beatley and Manning describe how many traditional planning tools have negatively affected our towns and cities:

> *This type of development has plagued our landscape and planners have been unable to significantly encourage a healthier type of development pattern. Planners continue to rely on the same tools that facilitated sprawl such as zoning regulations that mandate land uses to be low-density and completely separated, development regulations that require large parking lots and large setbacks, and comprehensive plans that encourage economic growth at the cost of social equity and environmental protection. Overall, planning has failed to bring health to our communities and in some cases actually exacerbated their decline.*

The planning field needs a new vision for the 21st Century. Planning needs to regroup and define a new common good or purpose to work towards. The purpose must be centered on creating communities that have the long-term ability to sustain healthy and fair ecological, economic, and political systems. Planning can work towards creating communities that engage residents to live within a natural set of boundaries that will allow the community to continue to provide a wide range of opportunities to its residents for many, many generations. Since planning has struggled to provide this in the past, the field needs to develop new tools and strategies to work towards this new vision. Planning needs to analyze the shortfalls in the tools

A NEW PLANNING VISION

There are several different theories that compete for the status as the new paradigm for planning. This paper selects a model developed by Berke and Manta-Conroy (2000) for sustainable development (SD).

Berke and Manta-Conroy's Sustainable Planning

Berke and Manta-Conroy define SD as "a process in which communities anticipate and accommodate the needs of current and future generations in ways that reproduce and balance local social, economic, and ecological systems, and link local actions to global concerns" (Berke and Manta-Conroy 2000). This definition is based on three conceptual dimensions of sustainability: system reproduction; balance among environmental, economic and social values; and linkage of local to global and regional concerns (Berke 2001). Sustainable development combines these three concepts to create a vision that is comprehensive and holistic. From these three concepts eight principles were derived that enable communities and planners to begin creating new methods to implement the sustainable development vision.

The first concept, "system reproduction", is based on the idea that urban areas are living systems that are constantly changing (Berke 2001). These changes are created from flows entering the system, flows circulating within the system, and flows exiting the system. These flows are from the urban system being imbedded within a larger ecosystem. Once leaders and the public understand the city's relationship with the larger ecosystem and understand that the city is dependent on the sustenance of the larger system, they will most likely

strive to live within the natural boundaries of that system and not degrade it. By operating within these boundaries or within the ability of the larger system to absorb the urban area's impacts, the leaders and public will then be able to discover methods to deal with change in order to maintain and increase the quality of living for both the present generation and future generations (Berke 2001).

The second concept, "balance among environmental, economic, and social views", is the ability of the leaders and the public to find an "appropriate balance among these sometimes competing, sometimes complimentary values" (Berke 2001). These three views are the foundation of the community and each of these values has to be represented in planning for the community to be able to develop and grow in a positive direction. If one of the values is not represented during plan making, the community will not be able to grow holistically, inclusively, and within the natural boundaries of our ecosystems.

Campbell illustrates the balance of these three values in the "The Planner's Triangle" (Figure 1), a triangle composed of the three conflicting goals for planning: economic growth, equitable distribution of the growth, and environmental protection. The axes of the triangle are the three conflicts that communities and planners must deal with: the property conflict, the resource conflict, and the development conflict. Campbell states that the balance of all three goals, the middle of the triangle, represents sustainable development. Therefore one of the methods to achieve a sustainable development vision is to find methods and ways to balance these goals in plan making and manage the conflicts (Campbell 1996).

The third concept of sustainability, "link local to global and regional concerns", calls for communities to work to solve regional and global problems at the local level and to take responsibility for impacts they create outside of themselves (Berke 2001). For the broader vision of sustainable development to be successful, communities need to cooperate with each other to begin addressing concerns that are beyond their capability of solving. If we continue on the common "each for their own" view, everyone will experience the "tragedy of the commons" scenario where each person pursues their own self-interest until the public good is completely destroyed. Regional level cooperation would greatly help prevent this type of tragedy. Communities could create external linkages and create a regional level of decision-making. Regional governments or commissions will be able to solve important issues that would be extremely difficult or impossible for local governments to solve by themselves.

The second aspect of the concept is for communities and individual polluters to take responsibility for their impacts (Berke 2001). Decisions and economic valuations currently do not fully account for externalities. In order to implement this concept into our plans, communities will have to revise planning techniques and tools. Leaders will have to hold the local government and the residents responsible for their actions through making sure that all externalities are known before development decisions are made. Planners must incorporate externalities into market-oriented techniques such as impact fees, taxes, and capital investments.

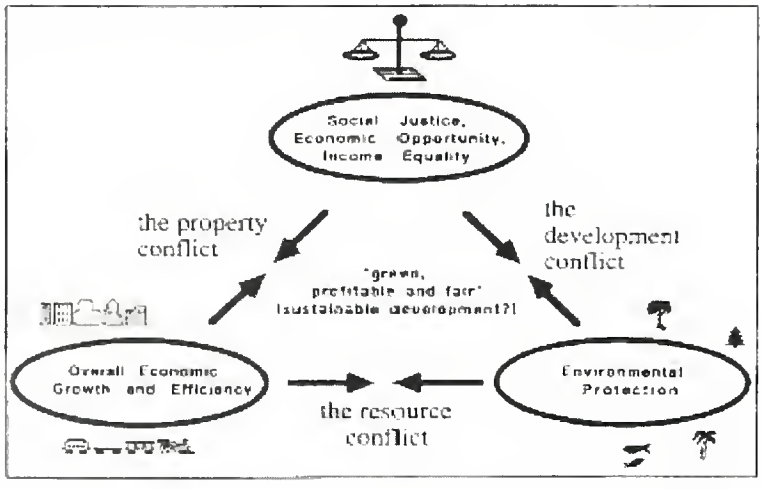

Figure 1. The triangle of conflicting goals for planning, and the three associated conflicts. The ideal of sustainable development is in the center. Source: Campbell 1996.

From the three concepts, Berke and Manta-Conroy derived six sustainable development principles. Each of the principles has a common notion and can be measured systematically. The principles help the planner translate the vision into practice and they allow the planner to evaluate how sustainable current practices are. The following are Berke and Manta-Conroy's operational principles:

1. Harmony with nature. Land use and development activities should support the essential cycles and life support functions of ecosystems. Whenever possible, these activities should mimic ecosystem processes, rather than modify them to fit urban forms. These activities must respect and preserve biodiversity, as well as protect and restore essential ecosystem services that maintain water quality, reduce flooding, and enhance sustainable resource development.

2. Livable built environment. The location, shape, density, mix, proportion, and quality should enhance fit between people and urban form by creating physical spaces adapted to desired activities of inhabitants, encourage community cohesion by fostering access among land uses; and support a sense of place to ensure protection of any special physical characteristics of urban forms that support community identity and attachment.

3. Place-based economy. A local economy should strive to operate within natural system limits. It should not cause deterioration of the natural resource base, which serves as a capital asset for future economic development. Essential products and processes of nature should be used up no more quickly than nature can renew them. Waste discharges should occur no more quickly than nature can assimilate them. The local economy should also produce built environments that meet locally defined needs and aspirations. It should create diverse housing, and infrastructure that enhances community livability and the efficiency of local economic activities.

4. Equity. Land use patterns should recognize and improve the conditions of low-income populations and not deprive them of basic levels of environmental health and human dignity. Equitable access to social and economic resources is essential for eradicating poverty and in accounting for the needs of least advantaged.

5. Polluters pay. Polluters (or culpable interests) that cause adverse community wide impacts should be required to bear the cost of pollution and other harms, with due regard to the public interest.

6. Responsible regionalism. Communities should not act in their own interests to the detriment of the interests of others, and they should be responsible of the consequences of their actions. Just as individual developers should be subject to the principle that polluters (or culpable interests) pay, a local jurisdiction has an obligation to minimize the harm it imposes on other jurisdictions in pursuit of its own objectives (Berke and Manta-Conroy 2000).

Reasons for Using the Berke and Manta-Conroy Model

Berke and Manta-Conroy's definition of sustainable development and the accompanying principles provide the best framework for a new planning vision. Berke and Manta-Conroy's theory is both comprehensive and holistic while the principles provide a practical and specific application.

Their three concepts strengthen planning so that it is comprehensive, analytical, and long-term. This theory as an overarching theme for planning provides an organizational concept that brings consensus among planning professionals and provides guidance in the practice of making and applying plans. The underlying purpose of the theory is to protect the natural environment and promote a more equitable distribution of resources while creating economic development that brings vitality and livability to a community. This type of vision engages planning to have broad goals that thoroughly address all aspects of our built and natural environment. The theory's principles combined with public participation and input provide the material that can be used to create a precise and proactive agenda for leading communities into a livable and equi-

table future.

Methodology

The Atlanta and Charlotte metropolitan areas were chosen for the evaluation because they are two cities that continue to experience rapid economic growth and are dominated by sprawl style development. These two cities have conditions that are very conducive to the development of sprawl such as high growth, no natural hindrances to growth such as the coast or mountains, and the dominance of the automobile as the main form of transportation. The difference between the two is that they are at different stages in their growth. Atlanta is already experiencing serious repercussions of sprawl i.e. highly degraded air quality, heavy traffic congestion, and continued population loss in the city. Charlotte is at an early stage in growth and has not fully experienced these problems. Leaders in the Charlotte metropolitan area are trying to develop plans that prevent Charlotte from developing in the way Atlanta has. The comparison of these two cities will help discover how well they are incorporating the idea of sustainable development into their approaches to stop sprawl and build communities that contain a high quality of living.

The purpose of the profile information gathered on each metropolitan area is to highlight similarities and differences in the history and atmosphere that will influence and differentiate the problems and approaches that the cities take. The profiles set a general understanding of the cities so that these characteristics can be linked to the plans,

Example 1: Within ARC's 2025 Regional Transportation Plan, the polluters pay principle is identified through a policy within the Transportation Emissions Control section. The policy states "promote cost-effective Inspection and Maintenance (I/M) testing designed to minimize emissions from gasoline and diesel powered on-road vehicles" (Atlanta Regional Commission 1999). This policy attempts to ensure that drivers maintain their vehicles to prevent excessive emissions; thus, this principle is classified as forcing polluters to pay. Since drivers will only be allowed to use their vehicles if they pass the test, the development management regulation that is used with this policy is within the "permitted use" category. The terminology that the plan uses in presenting the policy is "promote"; therefore the action is suggested and not mandatory and the plan is awarded one point. The inputted information is shown below.

Polluters Pay		
POLICY	Transportation	
	Code	Pg
1. Land Use Regs		
1.2 Permitted Use	1	13

Example 2: Within Charlotte's Center City 2010 Vision Plan, a policy stated in the urban design section supports the livable built environment principle. The policy states "heighten requirements for demonstrating financing and design intent prior to the issuance of demolition permits for properties determined 'locally significant' by the Historic Landmarks Commission" (City of Charlotte, Mecklenburg County, and Charlotte Center City Partners 2000). This policy fulfills the SD principle by protecting a special feature that supports "community identity and attachment" (Berke 2001). The development management regulation that is used is Standards for Retrofitting Existing Buildings. Since the plan uses no mandatory language in presenting the policy, the plan is awarded one point. The inputted information is shown below.

Livable Built Environment		
POLICY	Urban Design	
	Code	Pg
5. Bldg Codes and Stds		
5.2 Standards for Retrofitting Existing Bldgs	1	44

Figure 3. Plan evaluation method examples.

1. **Land Use Regulation**
   - Denisty
   - Permitted use
   - Special study zone
   - Sensitive area overlay
   - Setback buffer
   - Subdivision
   - Site review
   - Local environmental impact statement

2. **Property Acquisition**
   - Transfer of development rights
   - Acquisition of land
   - Acquisition of development rights
   - Land bank
   - Acquisition of development units

3. **Capital Facilities**
   - Phased growth
   - Concurrency
   - Location of capital facilities
   - Urban service boundary
   - Annexation
   - Design of public facilities

4. **Financial Incentives**
   - Impact Fees
   - General financial or other incentive
   - Reduced taxation
   - Bonus zoning
   - Exaction
   - Land trust funds

5. **Building Codes and Standards**
   - Standards for new buildings
   - Standards for retrofitting existing buildings

6. **Public Education and Awareness**
   - Builder workshops
   - Public education program
   - Real Estate Disclosure

Figure 4. *Development management techniques. Source: Berke & Manta-Conroy, 2000.*

policies, and the overall recommendations for using sustainable development as an approach in plan making.

Through applying sustainable development principles to plans, an understanding can be gained of how well cities are incorporating and balancing environmental, economic and social values. The principle policy evaluation method used the principles of sustainable development for evaluating how well plans support sustainable development. The evaluations provided empirical evidence that is used to compare and contrast the plans according to their promotion of the SD principles. Interviews with key stakeholders were used to identify any specific context or components in the development of the plan that form a basis for the success or failure of the plan to promote SD principles. The findings from these two steps will provide the information and analysis for creating overall conclusions and recommendations concerning how well cities are representing SD values.

Principle Evaluation

The principle policy evaluation performs an analysis of the entire planning document to identify how many times the principles are applied and if they are mandatory or encouraged. Their application is shown through different development management techniques which are the overall application tools planning uses to implement policies. The principle policy evaluation will allow plans to be measured based on their advancement of the sustainable development principles. Then plans can be analyzed comparatively and as a whole to decipher which principles are being left out and which cities are more actively advancing the concept.

The first step in the evaluation process is to identify the sustainable development principle promoted by the policies in the plan. The principle is identified based on the goal that is linked to the policy or the reasoning for the policy as it is described in the text of the plan. Second the practicality of the policy is evaluated by determining if it uses one of the listed development management techniques (see Figure 4). The list of techniques is a comprehensive list of current tools planners use. The policy is awarded points for each development

management technique used and is award additional points if the technique is mandated rather than encouraged. Examples of the method are shown in Figure 3.

Interviews

The interviews were conducted with professionals that were involved in either the creation or implementation of the plan. The interviewees ranged from a planning director to a consultant. The questions in the survey were created to 1) gather information about the political atmosphere and support for the plan, 2) the special interest that shaped the plan and 3) the interviewee's opinion on the strengths and weaknesses. With this insight, the empirical evidence from the evaluations on the sustainable development principles can be compared to the interview information to determine why certain values were emphasized in plans and why certain values were avoided. Interviews with key stakeholders presented important insights into the impetus for the plans.

The interviewees were chosen based on their ability to give objective and conceptual information on the plan. There were a total of five interviewees. Each interviewee was asked questions about one or more of the six plans. The questions were focused on all three of the above subjects.

Background of Studied Plans

Atlanta Plans

The Atlanta plans that were chosen for evaluation were a metropolitan land use plan, a metropolitan transportation plan, and the comprehensive development plan for the City of Atlanta. These three plans form a broad and thorough view of the planning actions that the region is taking to correct the problems and enhance the strengths that are taking place. Two major factors that have a large influence on the plans for the Atlanta Metro area are that 1) in 1999, 13 counties covering the metro area did not meet the federal air quality standards and therefore were not eligible for federal highway transportation funding and 2) in 1996 a nine square mile area within the City of Atlanta became a federal empowerment zone and receives a significant amount of grant funding and tax incentives to assist low-income residents and encourage job development. Both of these factors are heavily considered in establishing all three plans. The City of Atlanta CDP designed many of its policies and projects in conjunction with the advantages that are contained within the Atlanta Empowerment Zone. The Regional Development Plan and the Regional Transportation Plan have meeting federal air quality standards as one of their top goals in creating the plans; therefore, many of their policies reflect this.

The Atlanta Regional Commission (ARC), the Metropolitan Planning Organization for the ten-county Atlanta Region, created two of the evaluated plans for the metropolitan area while the City of Atlanta created the comprehensive development plan.

The ARC agency is responsible for carrying out a public participation process to identify regional goals and create strategies to attain the goals. State and local authorities use the goals and strategies to guide public investments and regulations. The agency is an advisory agency with no regulatory power. The agency does have access to a large amount of federal and state funding which it uses as "the carrot" to encourage local governments to abide by the standards ARC establish. In addition to the incentives ARC uses, the agency has an excellent reputation for understanding the current and future problems that the region will face. They are also known for creating solutions that will allow various municipalities to work together to alleviate these problems and create a higher quality of living in the area.

Regional Development Plan

ARC's Regional Development Plan "A Framework For the Future" was adopted in October 1999. The 1999 version is an update to a prior development plan. The plan presents 14 newly revised policies intended to serve as a guide for future regional growth. The RDP "forms the foundation for examining future water supply and water quality issues, provides insight into population growth and the implications for the delivery of humans ser-

vices programs, and outlines the future regional requirements for job skills training and economic development programs" (Atlanta Regional Commission - RDP 1999). The overall purpose of the plan is to correct the destructive growth pattern that is currently taking place and replace it with a pattern that decreases auto dependency, encourages higher densities, protects natural areas, and enhances quality of living.

The creation of the RDP started with VISION 2020, a project that utilized public participation to create a set of development issues. The development issues are the foundation of the RDP. The RDP was also closely coordinated with the Regional Transportation Plan (RTP) that was being developed at the same time. This coordination allowed both plans to develop policies that incorporated the land use/transportation link. This link allows land use strategies to complement transportation strategies to attain optimum gains. This vital coordination allows better usage and sustenance of a public transportation system, greater open space protection, the efficient usage of public monies and many other benefits that would not be possible by regulating only one sector.

Once the VISION planning effort was completed in 1996 and a set of goal statements was established to guide the RTP and RDP, ARC then analyzed four different growth scenarios. The first was a no-build analysis that "assessed existing and future transportation conditions, assuming no additional major improvements to the transportation" (Atlanta Regional Commission - RTP 1999). This scenario indicated that congestion would increase while air quality, mobility, and accessibility would continue to degrade. ARC then analyzed three other alternatives: 1) the continuation of existing growth patterns with increased alternative modes of transit along major travel corridors, 2) focusing future growth in existing developed and heavily populated areas of the Atlanta Region, 3) a combination of scenarios 1 and 2. After considerable research and debate, the task forces identified scenario three as the preferred option and presented a set of strategies to achieve this goal. The RDP focused on the land use and development alternatives that would achieve this goal and aid the transportation policies and projects.

The RDP is composed of 14 policies, a set of land use, transportation, environmental, and housing practices, and a short section on implementation. The policies are very broad and mostly focus on encouraging mixed use, dense development that transit can serve. The best practices are a very practical application of the policies. These practices mostly concentrate on different design elements of promoting a new style and pattern of growth and development.

Regional Transportation Plan

ARC's RTP is a detailed and comprehensive policy document that sets forth goals and strategies that aim to reduce dependence on single-occupancy vehicle travel and promote alternative forms of transportation. The RTP conforms to the federal and state air quality standards for mobile source emissions as outlined in the State Implementation Plan (SIP). To meet these requirements the RTP had to demonstrate that the outlined strategies would reduce expected daily emissions to less than 224 tons of Nox and 132 tons of VOCs. The projected emissions of both of these fall below budget by 2003 with the implementation of the RTP policies and projects.

The RTP was produced using the same process as the RDP, which is described above. There are four transportation goals that were identified in the VISION 2020 project and form the basis of the RTP. The goals are: 1) accessibility and mobility for people and goods, 2) attain regional air quality goals, 3) improve and maintain system performance and system preservation, and 4) protect and improve the environment and the quality of life. The next step in the planning process was to analyze the four different growth scenarios for the region. Once the preferred scenario was chosen, the ARC staff and board selected a set of strategies in accordance with the 2025 Performance Targets. The targets ranged from 40% population within 0.4 miles of transit to 1.3 vehicle hours traveled per capita. The RTP stakeholders established the targets as acceptable and desirable standards that the strategies should work to attain by 2025. The policies are categorized into eight categories:

new/expanded roadways, transit, land use, transportation demand management, emissions control, environmental justice, design, and safety (Atlanta Regional Commission - RDP 1999).

City of Atlanta 2002 Comprehensive Development Plan

The City of Atlanta CDP, adopted in August 2001, is a lengthy plan that covers a wide range of issues. The purpose of the plan is to "be used as a guide for the growth and development of the City and which will identify its present and planned physical, social and economic development" (City of Atlanta 2001). The wide range of issues within the plan is divided into sections. They include economic development, housing, human services, transportation, environmental facilities, natural resources, historic resources, parks and recreation, arts and cultural affairs, libraries, education, public safety, general government design, urban design, land use, and a section on specific study areas. Each of these sections contains the current conditions, anticipated future conditions, current policies, current programs and projects, and 2002 CDP current programs and projects. The plan also contains three attachments: 1) a fifteen-year land use map, 2) a water supply watershed protection ordinance, and 3) a wetland protection ordinance.

The plan's policies and projects are implemented through the City's zoning ordinance, the subdivision regulation, HUD grants, and economic development incentives. The City's economic development incentives include the Atlanta Empowerment Zone funding, the Urban Enterprise Zone tax abatement and tax credit program, tax increment financing, and impact fee exemptions. During the creation of the plan the planning department relied heavily on the in-depth research that was conducted by the Brookings Institution Center on Urban and Metropolitan Policy which was included in "Moving Beyond Sprawl: The Challenge For Metropolitan Atlanta." The planning department relied on this information to understand the regional forces and effects that are occurring instead of just focusing on the city limits. The Brookings Institute researched into how the large economic, demographic and policy trends were affecting the City of Atlanta and the metropolitan area.

The CDP gives detailed information in a systematic form. Each issue is presented with an extensive amount of information on the existing conditions. Then future projections are presented and they are compared to determine if the needs are met. Once needs are identified the goals are stated and policies are presented to meet the goals.

The mere breadth and depth of the analysis in the plan makes it very strong in affecting the social, economic, and physical aspects of Atlanta. The detailed knowledge base that is presented first in each plan element makes the policies very relevant and applicable to addressing the serious problems. The strength of the plan also lies in the specific policies that are applied through programs and projects. Each plan element ends with a chart stating the CDP program and project, the completion year and the responsible party.

Charlotte Plans

The Charlotte-Mecklenburg Planning Commission is the planning agency that creates and monitors all planning activity in the City of Charlotte and Mecklenburg County. The agency has produced three important planning documents that create visions of different scopes for guiding development and investments in their jurisdiction. The 2015 Plan, Center City 2010 Vision Plan, and the 2025 Transit/Land Use Plan are the three most current and definitive plans that form a unified vision of where and how Charlotte residents want to grow. These documents form a significant influence on Charlotte and guide the many smaller area plans that contain more specific, place-based strategies.

2015 Plan

The 2015 Plan "Planning for Our Future", adopted in November of 1997, is a product of an extensive public participation process that identified the most important community issues that needed to be addressed. The creation of the plan started with the 2015 View document that updated the growth projections to the year 2015 and assessed the current growth patterns. With this information fourteen citizen focus groups, including ap-

proximately 150 citizens, identified key issues, examined the current status of the County, and created goals and objectives of how to achieve "where they want to go" (City of Charlotte & Mecklenburg County 1997). The citizens identified seven issue areas: land use and design; neighborhoods; parks, recreation and open space; transportation; regionalism; education; and economic development. The plan is broken into sections devoted to each issue area. The sections start with a description of the issue area and then state very broad goals in which the citizens would like to have happen within these issue areas and then more specific objectives are stated to help achieve the goals. The last section of the plan is the implementation strategy for carrying out these goals. This section assigns tasks to different government agencies and proposes a cost estimate and source of funds for each issue. The plan is very comprehensive in the issues it addresses and contains a healthy balance among land use, economic, and social issues. Even though the plan is not a land use plan with development policies, the plan "serves as a framework and organization tool to ensure that priority issues are addressed" (City of Charlotte & Mecklenburg County 1997).

2025 Transit/Land Use Plan

Numerous private and public organizations worked together to form a revolutionary vision for the City and County. The plan, adopted in October of 1998, presents a large vision of a strong downtown with concentrated, mixed-use nodes of development in the periphery that are served by light rail transit. The plan is a bold move to stop sprawling development and create a strong alternative to the automobile. As a land use and transit plan, it focuses on the physical development of the area. The feasibility of the plan was strengthened with the passage of the one-half cent sales tax that is solely devoted to the funding for the public transportation system.

The overall strategy of the plan is "to coordinate the planning of land use and transit to achieve maximum benefits in guiding and servicing existing and future land development with transit investments" (City of Charlotte & Mecklenburg County 1998). The plan states overall land use and transit recommendations that will enable the vision to be achieved. Most of these recommendations aim to increase transit ridership and create a different development pattern in the region that will improve the quality of living. The recommendations aim to revise current policies, plans, and zoning to allow increased densities and mixed uses within Transit Districts (TDs). TDs are the designated nodes of development that will be served by transit. To be more precise, the plan divides the region into five different corridors and states specific land actions for each area. The plan assigns a variety of transit modes to the areas depending on the area's characteristics. For example the plan recommends bus rapid transit with bus only lanes for the Independence Corridor due to the low capital cost per rider for this low density strip development dominated area. Each section ends with phased implementation steps for the first 5 years, 6 to 10 years, and 11 to 25 years.

The 2025 Land Use/Transit Plan presents a bold scenario of drastically changing current development policies and ordinances to maximize the benefits that a large investment in transit will create. The plan is design focused with strategies for specific locations in the region. Even though the plan does not explicitly address social and environmental issues, the implementation of the "Centers and Corridors Vision" has the possibility of creating large social and environmental benefits.

Center City 2010 Vision Plan

Adopted in May 2000, the Center City 2010 Vision Plan is a comprehensive plan that is devoted to the physical structure of the center city. The boundaries set for the center city are shown in Figure 16. The plan was produced through three community workshops that involved over 700 citizens. In the workshops the participants identified a vision statement that would be the theme of the plan: "To create a livable and memorable Center City of distinct neighborhoods connected by unique infrastructure" (City of Charlotte, Mecklenburg County, and Charlotte Center City Partners 2000). The three goals that the citizens wanted to focus on were making the Center City more viable, livable, and memorable. The residents agreed that the most challenging goal would be to make Charlotte a more memorable place. To make the center

city memorable they formed seven general principles to guide the entire process. In the plan they stated "to create a memorable city, each future development, program, renovation, funding initiative and city improvement should be evaluated on its success in achieving the following criteria: pedestrian, mixed, balanced, leveraged, varied, designed, and connected" cities (City of Charlotte, Mecklenburg County, and Charlotte Center City Partners 2000).

The plan is divided into five different sections: land use, growth and city form; open space, parks and recreation; transportation, streets and parking; catalyst projects; and neighborhood plans. Each section consist of broad goals, recommendations with a diagram identifying exact locations for the recommendations, and lastly implementation steps. The goals are actually the application of three of the principles to the specific section. For example the goals for the Land Use, Growth and City Form section are to encourage a mix of uses; create a balanced ratio of residential units, office space, stores and entertainment facilities; and commit to a specific design in the downtown that is distinctly Charlotte.

Even though the plan lacks specificity in development policies, the plan creates guiding principles for ten years into the future and states ten priority projects that will make the center city more memorable. As shown in Figure 16 the plan applies the principles to the center city through an overall new design of the downtown and through targeting specific locations for projects that encompass the guiding principles. It is more likely that these specific actions will occur since the plan also used an intensive public participation process that formed a strong support and focus for the downtown.

Findings

Evaluation Findings

The results of the evaluation reveal a clear picture of how plans concentrate on enhancing the built environment to make a more efficient and enjoyable place for people. The livable built environment principle is the closest principle to the historic roots of planning field. The humanistic idea of creating and manipulating built structures to encourage identity, aesthetic appeal, comfort, economic productivity, and efficiency among land uses has been at the core of planning since its birth. The idea that this notion continues reveals planners fascination with the subject.

Results

Once the evaluation was completed the number of points from each principle for each plan were totaled. The results are shown in Figure 17. The results for the plans are that the City of Atlanta Comprehensive Development Plan scored the most points by a very large margin. The ARC Regional

	Atlanta			Charlotte			Total
	ARC 2025 RTP	ARC RDP	City of Atl 2002 CDP	Char.-Meck. 2010 Center City	Char.-Meck. 2025 Transit/LU	Char.-Meck. 2015 Plan	
Harmony with Nature	8	23	59	8	4	12	**114**
Livable Built Environment	46	65	101	64	64	33	**373**
Place-based Economy	9	16	15	9	1	21	**71**
Equity	19	12	59	7	4	26	**127**
Polluters Pay	1	0	1	1	0	0	**3**
Responsible Regionalism	20	32	4	1	6	44	**107**
Total	**103**	**148**	**239**	**90**	**79**	**136**	**795**

Figure 17. *Overall results from sustainable development evalutation.*

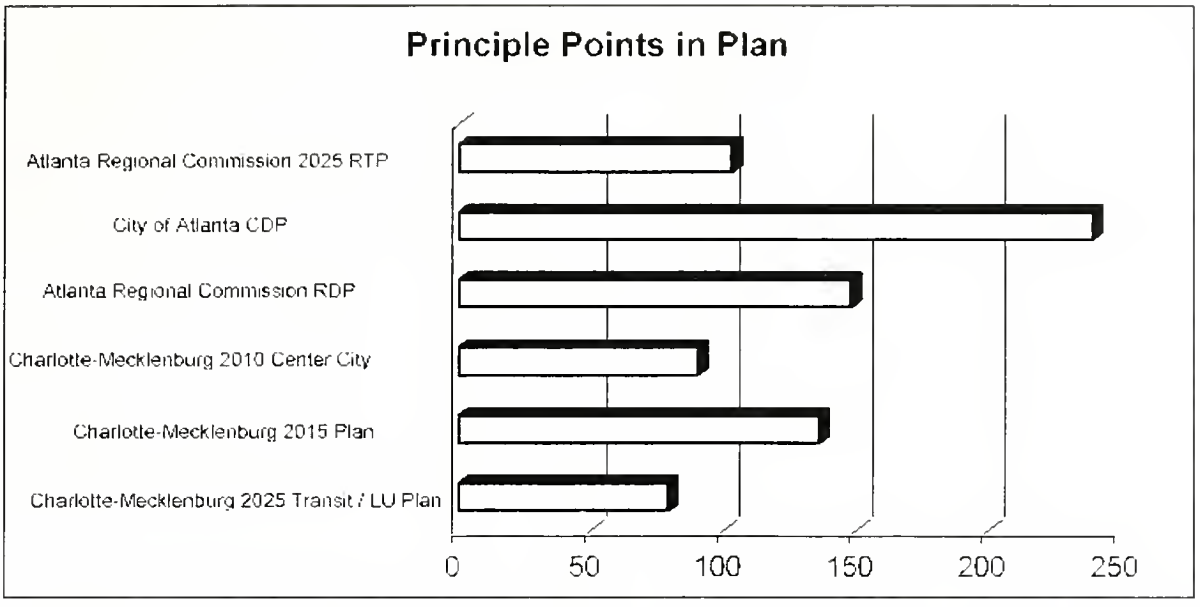

Figure 18. *A comparison of total scores for each plan.*

Development Plan scored the second most points and the Charlotte-Mecklenburg 2015 Plan came in third. The Charlotte-Mecklenburg Transit/Land Use Plan scored the least points out of all the plans.

The comprehensive development plan is the plan that scored the highest number of points. This reveals the ability of the plan to balance the competing values of sustainable development and thus create a holistic approach to planning. The City of Atlanta CDP scored very high points in equity and harmony with nature and thus emphasizes social and environmental values more strongly than the other plans.

The 2002 CDP scored the most points in the equity principle by a large margin. The plan contained extensive and aggressive programs for promoting equity. One of the reasons the City was able to do this, besides the significant amount of attention that the City has historically placed on equity, is that the City was awarded an Empowerment Zone designation in 1994. The City received a grant award of $250 million from the U.S. Department of Housing and Urban Development. The purpose of the grant is to "empower selected inner-city low income communities and their residents through economic and community development programs, public safety programs, and social service programs to solve difficult social and economic issues in these communities" (City of Atlanta 2001). The plan benefited by intertwining many of their policies with the federal programs and policies.

An example of a policy within the plan that is linked to the Empowerment Zone is the Empowerment Zone Down Payment Assistance Program. The program assists first-time homebuyers, within the empowerment zone, with up to 80% of their down payment.

Another example of an equity policy that was included in the 2002 CDP is development fee exemptions. The policy states that developers who are building affordable housing units or economic development projects are exempt from the payment of development impact fees. Eligible economic development projects are projects located within designated low-income areas.

The 2002 CDP plan also went into great detail on environmental policies, which directly supported the harmony with nature principle. The plan contained specific policies that aim to protect natural resources. These policies range from permitted uses within the subdivision regulations to educational programs. An example of a policy is "restrict development of floodplains to pathways, picnic areas, ball fields, golf courses and other appropriate

recreational elements that protect and preserve the resource" (City of Atlanta 2001). Another example is the policy that states "support and promote opportunities for establishing conservation easements as authorized in Section 10-2044 of the City of Atlanta Tree Ordinance" (City of Atlanta 2001).

There are numerous policies within the plan that support equity and natural resources. The plan also represents other SD values through separate sections on economic development, transportation, historic resources, land use and urban design.

The plan that scored the second highest points is the ARC Regional Development Plan which despite scoring a large amount points in the livable built environment category also significantly stressed regionalism, environment, and economy. The plan covers all of the SD principles except for the polluters pay principle. Besides the livable built environment principle, the plan scored high proportionally in the harmony with nature, place-based economy, and responsible regionalism principles.

The plan's concise format starts with policies, states best practices for each policy area, and ends with a section on implementation. Best practices were not used by any of the other plans in the study. Best practices are an excellent method for revealing how policies should be applied and made into action steps. Many of these action steps illustrate how the SD principles are represented and supported within the plan. For example the plan scored relatively high in the harmony with nature principle. The policy related to harmony with nature principle in the plan is policy 10: protect environmentally sensitive areas. The policy is very vague until it is broken down into best environmental practices. There are eleven best practices that explain exactly what areas to protect and how to best protect them. Principle three is to "preserve patches of high-quality habitat, as large and circular as possible, feathered at the edges and connected by wildlife corridors, stream corridors offer great potential" (Atlanta Regional Commission - RDP 1999). This principle explains what areas the local governments should attempt to protect and how to design the protection areas. Principle eight is to "detain runoff with open, natural drainage systems, the more natural the system the more valuable it will be for wildlife and water quality" (Atlanta Regional Commission - RDP 1999). These principles show how development and preservation efforts should mimic ecosystem processes, which is exactly what the harmony with nature principle advocates for. Therefore the best practices section was a key element within the plan that revealed how the policies support SD principles.

The plan that scored the least amount of points was the most specialized plan. The Charlotte-Mecklenburg 2025 Transit/Land Use Plan contained a large amount of information and policies but they were almost all concentrated on making a better fit between people and the urban form, livable built environment principle, with very little concern for the environment, regionalism or equity.

The focus of the plan was on promoting the centers and corridors theme to the public. The plan focuses on how this major public investment will be designed and sited. Therefore the majority of the plan is composed of how the land use regulations surrounding each corridor will be changed, what type of transit system will be developed, the phasing of the system, costs, and issues and steps involved. The plan stresses how accessibility and mobility will increase and how quality residential and office development surrounding the stations will occur. The plan avoids integrating any other values or concerns.

The livable built environment principle represented 81% of the SD principles within the plan, while the equity and harmony with nature principles combined represented 10% of the SD principles within the plan. There are numerous proposed policies within the plan that support creating a livable built environment. Most of these dealt with either the urban design or the transportation facilities. Some examples of these proposed policies are creating transit districts (TD) that have: minimum densities, density bonuses for cluster development, accessory apartments allowed of right, and streamlined permit processes. Another proposed policy is "creating incentives (including tax breaks) for redevelopment projects that incorporate transit fa-

cilities or provide other definable transit supporting features" (City of Charlotte & Mecklenburg County 1998).

There were only a few principles or policies that dealt with equity or protecting natural resources. Some of these are "added services by the Department of Social Services to transport the elderly to and from non-medical trips and the disabled to jobs and increased specialized transit service for the disabled-accessible buses" (City of Charlotte & Mecklenburg County 1998). The only proposed policy for environmental protection was density bonuses for cluster development with increased open space.

There were a great number of opportunities within the plan to account for social, environmental, and regional values and create strategies to protect each of these elements but none of these opportunities were taken advantage of. For example, the plan could have recommended methods for preventing the centers and corridors from encouraging development in environmentally sensitive areas. The plan could have created a strategy for creating economic development within low-income neighborhoods. The plan could have also identified ways to prevent low-income residents surrounding proposed transit stops from being displaced. There were a great number of missed opportunities in this plan.

Overall Plan Evaluations

The results for the principles are that the livable built environment principle was promoted in the plans significantly more than any other principle. The livable built environment principle accounted for almost half of all the principles promoted in the plan. Each of the other principles accounted for 16% or less in the plans. The polluters pay principle represented less than one percent of the sustainable development principles. These results are consistent with the comprehensive plan evaluation results from the Berke and Manta-Conroy study completed in 2000.

The plans that balanced more SD values used a specific method to do this. The 2002 CDP used a federal program that provided the resources and momentum for developing policies and strategies for equity and urban environmental protection and cleanup. The ARC Regional Development Plan used best practices to exemplify how the policies should be applied. The plans that performed the worst in the principle policy examination were the plans that were narrowly focused on development and did not include any type of method for representing other values.

The principle policy examination reveals that planners and their plans must create holistic and creative strategies that move beyond the fixation with building better structures to influencing processes and social structures. As shown through the narrow scope that plans use, planners' understanding of all the aspects that can be positively affected through the planning field is not fully realized. Planning has ignored the effect that plans can have on the social and economic realm while almost completely emphasizing development approaches that make the built environment more compatible to people. The more planning moves beyond its historic parameters into creatively working to solve societal problems holistically, the more the sustainable development philosophy will materialize in our communities.

Interviews

The following is a synopsis of the information gathered in the interviews:

City of Atlanta 2002 Comprehensive Development Plan

The plan is a mandated yearly update for the City of Atlanta. The plan contains a broad base of support including multiple governmental departments, city council, and the neighborhood planning districts. The main issues addressed in the plan are gentrification, urban design and land uses, and development plans for the Empowerment Zones. The strategy for these issues are to use subsidies, density bonuses, etc. to provide incentives for affordable housing and land use controls (J. Heath, personal interview, March 12, 2002).

The 2002 CDP scored the highest overall in the SD principles. The plan also contained the highest proportion of points devoted to the equity principle and the highest proportion of points devoted to the

harmony with nature principle. There are three main reasons identified in the interview that the plan contained the highest proportion of points in these two principles: 1) the plan was greatly influenced by a special interest group that represented low-income neighborhoods, 2) the plan was linked to the federal Empowerment Zone Program which provided resources and strategies for equity and environmental justice, and 3) the plan states detailed and specific policies with implementation steps for a broad range of issues.

The interviewee actually identified two of these three reasons as weaknesses within the plan. The special interest influence was identified as a fundamental flaw of the planning process. The interviewee stated that the neighborhood planning units, which help develop the plan, have diluted the policies because of special interests. The groups were created as advisory committees but now use their influence and control to concentrate the plans on specific, narrowly focused issues that greatly decrease the ability of the plan to promote a broad long-term strategy for the City. The second weakness is the detail of the policies. The interviewee states that the plan is too large and the yearly update is too often. The size of the plan discourages residents from reading and using the plan. The attachments combine material that take away from the utility of the plan. The yearly updates are too often and overburden the planning staff. The planning staff cannot concentrate their time and energy to many other projects because of yearly updates (J. Heath, personal interview, March 12, 2002).

ARC Regional Development Plan

The Regional Development Plan is required by the State every five years. Numerous government agencies and citizen groups supported the plan. The support included the Atlanta Chamber of Commerce, ARC and its' board, the State Governor, Georgia Regional Transportation Authority (GRTA), and citizen support from the intensive public participation workshops. The plan's main theme is to guide growth according to Smart Growth principles. The implementation of the land use strategies is not included in the plan but is within the "Joint Land Use Strategy".

The plan's strength in the livable built environment SD principle is shown through its' encouragement of infill development and redevelopment. This part of the plan is rapidly taking place - not because of regulations or incentives provided in the plan – but because of a change in consumer taste. There is a recent trend for people to move inside the 285 beltway to get closer to jobs. This is mainly because traffic is becoming such a large problem people are changing their location to improve accessibility (D. Reuter, personal interview, March 12, 2002).

Although the livable built environment principle is the dominating principle in the plan, there are major weaknesses in how the plan addresses that principle since the plan does not create a completely effective strategy for stopping sprawl. The plan does not address the restriction of growth (D. Reuter, personal interview, March 12, 2002). The plan states tools for managing growth but does not attempt to restrict the sprawling development that is consuming large tracts of open space in the metropolitan area. The destruction of open space is one of the largest livability problems for the metro area and the plan does not address this problem.

ARC Regional Transportation Plan

Since the plan was created by the same agency and close to the same time that the RDP was created, the support and representation of the plan are very similar. One important difference is that the RTP was federally required since the Atlanta Metropolitan Area did not attain the mandated federal air quality requirements. The federal government froze funding for roads until the metropolitan area showed conformity. Part of the conformity process is for the Metropolitan Planning Organization (MPO), which was ARC, to create a transportation plan every three years.

As shown in Figure 17, the ARC RTP scored very low in the environmental, equity, and economy principles. One of the main reasons that the plan does not include these elements into the transportation strategy is because these are mainly affected through the land use/ transportation connection and the plan does not adequately link land use planning

with transportation planning. The plan does not set up a structure for regional coordination of land use controls with the construction of transportation infrastructure. The transit and road construction has a "hit and miss" connection with land use (D. Reuter, personal interview, March 12, 2002).

Charlotte Land Use / Transit 2025 Plan

The Charlotte Land Use / Transit 2025 Plan was based on an adopted 1995 plan called "Centers and Corridors Vision" which was to redirect growth to the thoroughfares and the center. The 2025 Plan contains integrated land use and transportation strategies to develop a more specific framework for the vision. One of the main purposes of this plan was to gain support for a ½ cent sales tax referendum. The plan did gain enough support and the referendum was passed. The next step in this large infrastructure project is the investment studies of the specific corridors. More than any other plan in the study, the Charlotte 2025 Plan disproportionately promotes the livable built environment principle compared to the other principles. The overemphasis on creating an attractive and enjoyable physical environment is directly related to the special interest that helped create and support the plan. The special interest was the Mayor and the downtown business community. Both of these parties wanted to "sustain the economic dominance of the center through anchoring it with transit", which is the theme of the 2025 plan (U. Avon, personal interview March 17, 2002).

The Mayor used the "Centers and Corridors Vision" as a political stance that was based on enhancing transportation mobility. The other main supporter was the Charlotte Center City Partners, which is a very powerful public/private group that was started in the 1970s to represent the business interest in the downtown (D. Campbell, personal interview, March 14, 2002). The elected officials and the business interest have a strong relationship in public/private investments and both supported the "Visions and Corridors" strategy.

Equity represented only 5% of the SD principles within the plan. There are many equity implications that the plan will create and these are not addressed within the plan. These implications are mainly gentrification and longer transit travel for the existing transit dependent population. A portion of the existing bus transit will mostly likely be re-routed to the light rail stops. This could create a heavier burden on people currently relying on bus service since it will increase travel time by creating more transfers. The transit locations will create a certain amount of gentrification (U. Avon, personal interview March 17, 2002). But according to the planning department some displacement and gentrification is positive (D. Campbell, personal interview, March 14, 2002).

Charlotte Center City 2010

The Charlotte Center City 2010 Plan is the third city center plan since 1980. The plans are updated every ten years. The plan is jointly sponsored by the Charlotte Center City Partners, a downtown public/private business interest group. The plan also included a strong public participation process during its' creation.

The 2010 Plan is very similar to the Charlotte Land Use / Transit 2025 Plan in that it disproportionately promotes the livable built environment principle compared to the other principles. The overemphasis on this principle is also directly related to the special interest. The same special interest group in the Charlotte Land Use / Transit 2025 Plan, the Charlotte City Center Partners, was the dominating supporter of this plan. The business group wanted to use the plan to create a downtown environment that would attract residential and retail activity. The plan's approach is through public infrastructure such as parks and transit corridors and targeting areas for redevelopment. Despite the plan's attempt at creating a more livable environment, it has been unsuccessful at attracting retail to the downtown (M. Cramton, personal interview, March 11, 2002).

Equity represented 7% of the SD principles within the plan, while the livable built environment principle represented 71% of the SD principles within the plan. This inadequacy for representing other values within the plan reveals the narrow view that the special interest groups encouraged.

Some equity considerations were addressed

through the use of focus groups. For example focus groups were used to resolve a conflict between the existing neighborhoods within the City and developers. The developers were encouraging higher densities and infill development in the neighborhoods within and surrounding the center city. The neighborhoods were fearful that the increased density would create more crime and degrade the sense of community. Through focus groups both parties worked out a solution allowing higher densities with attractive development that was sensitive to the existing neighborhood fabric (M. Cramton, personal interview, March 11, 2002).

Charlotte Planning For Our Future 2015

Planning For Our Future is a policy document that is an update to the 1985 land use policies. This document was the first step in developing the 2025 plan. The plan was solely supported and developed by Charlotte-Mecklenburg Planning Department.

The 2015 Plan balances the SD principles the best out of all the plans in the study. This more equal representation of values is due to the breadth of issues covered in the plan and the specific goals, objectives, and actions that are stated within each of the issues. The plan covers many issues since it serves as an overarching framework for the neighborhood district plans to go into much more detail. The second strength, the specific implementation steps, is due to the formatting of the plan. In addition to the goals, objectives, and actions sections within the plan, the plan contains an implementation section that assigns responsibilities to government bodies and requires inter-government coordination. For example, one of the outcomes of the plan was the creation of a public school facilities plan that specifies joint projects between the planning department and the school system (M. Cramton, personal interview, March 11, 2002).

Overview of Interviews

The interviews uncovered three main issues pertaining to SD: 1) special interest groups had a significant impact on the SD goals of the plans 2) the lack of a unified strategy for stopping sprawl greatly limited the amount of SD principles that were incorporated and 3) detailed policies and implementation steps greatly increased the intensity of SD principles. Each of the six plans was affected by at least one or two of these issues.

In many of the plans the interviewees identified groups that had a considerable amount of control over the plan. Some of these groups put a significant amount pressure during the plan making process to assure that their interest were addressed. Many of these specific concerns were raised as priorities and some of these concerns limited the SD goals of the plan while some actually promoted SD goals.

The plans presented various tools that can be used to stop dispersed development but did not state an integrated set of polices that would aggressively discourage low-density greenfield development and encourage mixed use, higher density development. Most of the plans stated various development management techniques to control growth but did not connect these tools to reinforce each other. Without a strong unified strategy that links residential and commercial development to accessibility and mobility, these metropolitan areas will continue to develop in a horizontal spatial structure.

Conclusions and Recommendations

Critique of model

The policy evaluation model served the purpose of rating the level in which plans integrated policies that promote the ideas of sustainable development. The model enabled the plans to be analyzed based on how well they represent the values of sustainable development and how well they crystallize the goals into workable policies. Even though the policy evaluation model was able to rate the plans, the model contained flaws and weaknesses that are summarized as: 1) the difficulty in capturing all the plan's policies that promote a specific principle, 2) the inability to quantify the large projects within a plan that will fulfill a certain principle, and 3) the possible disadvantage that a land use plan would have compared to a comprehensive plan.

The difficulty in capturing all the plan's poli-

cies that promote a specific principle is mainly caused by the rigid set of policies that all the principles within the plan are rated with. These policies focus on physical development and do not include many social programs and policies at all. The dominance of physical policies creates problems in trying to capture policies that promote equity and place-based economic development. Another problem is that the rigid set of policies lacks the ability to capture innovative and new policies. Changing the policies according to the principle would alleviate this problem. For example, when evaluating equity within a plan, the model's policies should change to reflect more socially oriented policies. This would provide a more reflective rating of the plan's work in promoting equity.

The second weakness concerns how the large projects that a plan promoted were not taken into account in the rating. For example, the Charlotte Land Use / Transit Plan was based on the construction of a light rail and rapid bus system that attempts to decrease sprawl and promote mobility. This large investment contains numerous environmental and equity benefits that were not captured in the rating.

The last weakness is the possible disadvantage that a land use plan would have compared to a comprehensive plan. Comprehensive plans do cover more elements than a plan focused on land use and therefore would possibly be able to score more points since the comprehensive plan covers more elements within a community. Although this could create a slight discrepancy in points, the underlying theme of the comparative study is to reveal how the sustainable development ideology is not composed of values that are applied separately but that the balance of all three values represents sustainable development (Campbell 1996). Therefore if all three values are represented equally, a plan would not score less if it concentrated on land use since equity, environmental protection and economic development would be equally integrated into the policies.

Conclusions

The plans that performed the best in the principle policy evaluation were the plans that: 1) incorporated more of a balance among values, 2) used a specific method to balance values, 3) allowed special interest to advocate for values without over representing particular values, and lastly 4) incorporated specific policies that included implementation steps. These four elements were evident in the plans that scored the highest in the principle policy evaluation.

Plans that contained a more equal proportion of represented values scored higher overall. Since the livable built environment principle dominated all of the plans, plans that promoted other principles in concert with the livable built environment principle scored better than plans that solely concentrated on making a better fit between people and the urban form. For example the plan that scored the highest overall, the City of Atlanta CDP, only contained 42% of their principles representing the livable built environment principle while the plan that scored the least overall, the Charlotte-Mecklenburg 2025 Transit/Land Use Plan, contained 81% of their principles representing the livable built environment principle.

Plans that represented more of a balance among competing values incorporated a particular method to promote other values. The various methods provided the momentum and the capacity for plans to integrate aggressive strategies that represent values that are normally not included. For example the City of Atlanta CDP connected their policies and projects with the Federal Empowerment Zone Project to provide additional support and momentum for services towards equity and environmental protection. Through linking their policies to the Federal Empowerment Project, the plan was able to develop substantially powerful policies and projects for providing services to low-income neighborhoods, attracting reinvestment into these areas, and advocating for environmental protection during the development process. The equity and harmony with nature principles each represented 25% of the policies within the City of Atlanta CDP. This was the largest representation of both principles in the principle policy evaluation.

The third characteristic of the most successful plans in the evaluation is the ability of the plan making process to enable special interest groups to

contribute to the plan without allowing them to compromise the overarching goals of the plan. Special interest groups can serve an important purpose of advocating for the inclusion of more diverse and varied views into the plan making process. Special interest groups can promote and increase a more balanced representation of values. For example, in the City of Atlanta CDP the neighborhood groups were powerful special interest groups that advocated for a larger focus to be given to low-income residents and neighborhoods. The impact of these groups is shown through the relatively high points that the equity principle received in the evaluation.

Just as special interest groups can reallocate attention to underrepresented values, special interest groups can also negatively impact plans through influencing plans to overwhelmingly focus on their particular interest at the cost of the other concerns. This is shown in the lowest scoring plan, the Charlotte-Mecklenburg 2025 Transit/Land Use Plan. The special business interest that had strong ties with the City and County governments focused the plan on sustaining "the economic dominance of the center through anchoring it with transit" (U. Avon, personal interview March 17, 2002). The significant pressure that the special interest group placed on creating a functionally efficient and aesthetically pleasing city severely stifled the other values from being represented. This is shown through the low representation, 19% of total score, that the plan gives to all other principles.

The last characteristic of successful plans is the incorporation of specific policies that include implementation steps. Plans that contained detailed policies that were supported by descriptive strategies, which can be evaluated and held accountable to, scored higher in the principles policy evaluation. One example is how the ARC Regional Development Plan, the second highest scoring plan, used best practices within each policy section and ended with a section on implementation. The best practices are a practical and more easily understood method for applying the policies. The best practices are specific guidelines that can be measured and regulated. Another example is how Charlotte's 2015 Plan, which received the third highest number of points, assigned each of the goals in the plan to a specific government agency and attached key actions and cost estimates for the designated department. During the interview the interviewee had stated that many of the assigned tasks had already been completed.

How Can Planners Integrate Sustainable Development Into Plans?

For plans to be sustainable they need to focus more on the social and environmental elements of a community rather than being overly concentrated on the physical built environment. Through the evaluation of sustainable development principles within different plans and interviews with key stakeholders, the paper identifies three specific ways that plans can better incorporate a more balanced representation of sustainable development values:

• **Plans need to integrate particular mechanisms for balancing competing values.** The purpose of these mechanisms is to promote a balanced representation of values through providing the capacity and tools for advancing underrepresented values. These mechanisms include federal and state programs, federal and state mandates and policies, regional initiatives and community goals and guidelines. These different programs and policies can be used within a plan to increase the ability of the plan to promote values that are many times not equally included.

• **Planning agencies need to put in place mechanisms that involve special interest groups but balance the amount of control they have over the process to ensure that the broad goals and policies do not get compromised in order to satisfy special interest.** Plans need to be devoted to the larger, long-term vision of the community. Plans need to continue with intensive public participation, neighborhood district representation, and facilitating the business interest so that these groups will bring knowledge and ownership into the planning process. More importantly this participation needs to be balanced with an adherence to the larger, broader goals that will benefit the entire public and will address regional and global concerns.

• **Plans need to state specific policies that are supported by implementation programs.** The policies and implementation steps can take various forms. Policies can be made explicit through best practices, guidelines, objectives, and key actions. The policies need to be followed by an implementation plan that assigns responsibility to certain parties. The implementation plan needs to include a timeline and the type of resources that are needed and available for the steps to be completed. Through explicit policies and implementation steps, plans are able to reveal how sustainable development values represented within the plan are converted into actions that will become a reality.

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